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The world exclusive preview, page 62

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18 years

In the 18 years since Richard Garriott created *Akalabeth*, the precursor to *Ultima*, computers have increased in power thousands of times. In the summer of 1979, no amount of money on the planet could have bought a computer that could generate the number of realtime texture-mapped polygons required by *Ultima IX: Ascension* (page 62). Few gamers or game creators back then could have foreseen just how complex and sophisticated games — and the game industry — would become over the next 18 years.

Garriott got his start when his manager at Computerland sent a cassette tape of *Akalabeth* to a publisher. Within months, Garriott was a star. But success in the game industry is no longer so easy. In fact, it's becoming harder to break into the industry every day. For those with the passion and desire to make games for a living, our feature on how to get a job in the game industry, 1998 edition, starts on page 38.

NEXT GENERATION

March 1998

Contact
Next Generation
Imagine Media, Inc
150 North Hill Drive
Brisbane CA 94005

Editorial
415 468 4684 **voice**
415 468 4686 **fax**
ngonline@imaginemedia.com **email**
Advertising
415 468 4684 x123 **voice**
415 468 4686 **fax**
jim@next-generation.com **email**

If you have questions about a subscription, please contact **Customer Service** 800 678 3643 email subscribe@next-generation.com with "**Next Generation**" as the subject

Editorial
Chris Charla editor-in-chief
Mike Wilmoth senior art director
"Chatty" Cathy Lu managing editor
Patrick Baggatta lost in cyberspace
Jeff Lundrigan reviews editor
Tom Russo previews editor
Mike Mika associate editor
Nell West editor-at-large

Christian Svensson editor, ng online
Dan Egger editor with a 'tude
Ed "General" Lee disc editor

Colin Campbell back at the OFSB
Nicolas di Costanzo Japanese correspondent

Editorial Contributors
Roger Burchill, Jeff Chen, Craig Harris, Steve Kent, Bill Paris, Adam Pavlacka, Francesca Reyes, Mike Salmon, Carrie Shepherd, Marcus Webb

Photography
Jude Edgington

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Advertising
Jim Pothier national advertising manager
Kathryn Herrick account executive
Jason Michaels marketing zorro
Julie Fisher sales development director
Katie Cole ad coordinator

Production
Richard Lesovoy production director
Mark Eastwood production coordinator

Imagine Media, Inc.
Jonathan Simpson-Bint publisher
Tom Hale director, CD-ROM publishing
Bruce Eldridge newsstand director
Thea Selby newsstand manager
Terry Lawson newsstand analyst
Holly Klingel vp circulation
Kate Bailey circulation manager
Jane Jarvis fulfillment manager
Brian Hostetler hardware hero
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Chris Anderson president

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International Licensing Representative
Robert J. Abramson and Associates, Inc.
720 Post Road, Scarsdale, New York 10583
fax 914 723 4700, email abramson@prodigy.com

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Next Generation shares editorial with the U.K.-based magazine **EDGE** and is not affiliated with NeXT Software, Inc. Unsolicited manuscripts cannot be returned or acknowledged. We reserve the right to edit all letters for space or clarity. Welcome Mike Mika and Micky Live in the 415. It's amazing, really, the way the issue after Christmas break reminds us all why we never take vacations the rest of the year. NG Death March '98. And, cryptically, lets just say that everything ends with G.

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How to get a job in the game industry
It's not always glamorous, fast-paced, and fun, but it can be. We dissect the careers of artists, programmers, producers, and more

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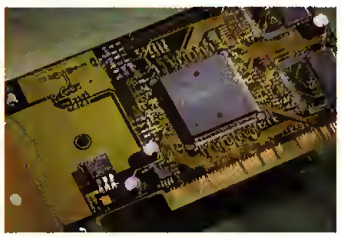
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Brian Moriarty has designed games for Infocom, LucasArts, and Rocket Science. Having been MPlayer's head of game design for almost two years, he shares his view of what's been learned about online and what's to come

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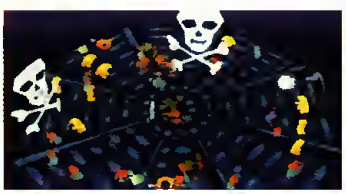




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Previews of innovative games by influential people. Take a look this month at *Sega Rally 2*, *Millenium Four: The Right*, and *Virus 2000*. The future of games, right here, every month





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The **Next Generation Disc** brings you a whole other level of understanding about the games we cover

ng **Disc** Contents

Immerse yourself in the sights and sounds of the game industry

When our readers use the **NG Disc**, they are privy to exclusive information about the latest games. But **The Disc** brings you much more, also focusing on the people who bring those games to life. **The Disc** is really a supplement to the content provided in the print magazine and is essential to complete the **Next Generation** experience.

On **The Disc** this month: Richard Garriott and Edward Del Castillo speak to **NG** about one of the most anticipated titles of the year, *Ultima IX*. Plus, more than 55 megabytes of import PlayStation footage, and Eidos' Ian Livingstone sits with **NG** to discuss his long history in gaming.

Every month, we publish two editions of the magazine — one comes with a disc, the other doesn't. For any and all subscription inquiries, call (800)678-3643. We welcome your feedback at **disceditors@next-generation.com.** Or get more information at **www.next-generation.com/cdrom.**

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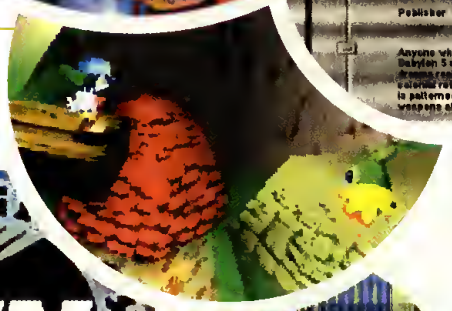


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finals

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The Palace 2.5, Heat, **Next Generation Online**, Imagine Games Network

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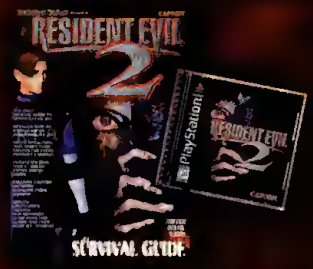


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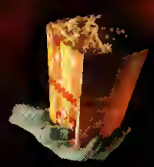
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PlayStation

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Almost two years ago, Brian Moriarty, MPlayer's head of game design, outlined his vision of online gaming's future. Since then, a lot has changed. So how have the goalposts shifted? What lies ahead? And ...

What have we learned about **online gaming?**



Despite its hiccups, stalls, and false dawns, the online multiplayer genre remains gaming's wildest and most exciting frontier. Piles of investment capital have been spent, countless hours of internet connections have been logged, and — as in all fields of high-risk pioneering — reputations have been won and lost. But MPlayer has remained steady at the top of the heap and now boasts more than 300,000 subscribers.

Brian Moriarty is MPlayer's head of game design, having joined the company in 1996 following stints at Rocket Science, LucasArts, and Infocom. He's one of the most respected game designers in the business and is now devoted full time to making online gaming everything its proponents claim it can be. **Next Generation** caught up with him at MPlayer's Santa Clara, California, headquarters.

Older and wiser

NG: What do we know about online multiplayer gaming today that we didn't know two years ago?

Brian: The following phrase: "It's community, stupid." Social contact is the thing that we're really selling here. Our job at MPlayer is really about bringing together people who like to play games and like to talk about games — it's a common interest thing.

NG: Are you saying that this social element — the conversations, camaraderie, the sense of community — has turned out to be even more important than you'd expected?

Brian: It's turned out that it's almost everything. When people come to MPlayer, really what they are buying is each other. And I can't offer you a percentage figure of exactly how important this social aspect is, but it's obviously the main thing. It's more important than the actual business of purely playing games.

Now it's fairly clear to everybody that gamers don't like to pay — especially the hardcore gamers clever enough to find ways of playing these games for free







NG: In what ways does this occur?
Brian: A very high percentage of the activity that happens on MPlayer is chat: people hanging around in the lobbies and just talking — and not necessarily, or even very often, talking about the games that they are ostensibly there to play. We introduced a checkers game several weeks ago, and now it's not unusual to go into the checkers lobby and find people typing chess moves at each other, playing chess. And this kind of social improvisation happens all the time. And it's great to see that if you get people in a room with similar interests, interesting stuff starts to happen.

NG: What else has the online gaming world learned over the last two years?
Brian: Two years ago it wasn't so clear to game publishers that they needed to have a multiplayer component in their games. Some people were beginning to get it, the action-game producers mostly knew it, but the majority of game makers didn't realize quite how important it was. And back then there were still many major games released with just single-player modes. Now, in 1998, it's obvious to all publishers that every game has to have a multiplayer component. Too many of them have been beaten up by the press and suffered at a retail level because they've ignored multiplayer. Now they've all learned the lesson. It's not even a question anymore. It's a standard feature and every game must have it if it's going to stand any chance of succeeding.

NG: And have game producers learned this lesson easily?
Brian: No, getting from there to here was a major hurdle. We had a lot of trouble convincing people just how big this was going to be. But I think it's safe to say that now multiplayer gaming is beginning to resemble a mass-market phenomenon, whereas two years ago, a lot of people remained unconvinced.

NG: As you say, the market is now awash with multiplayer games. But two years ago, when *Doom* and a handful of other titles were first being converted for online, multiplayer use, the developers found it very, very difficult. In hindsight, we can see that this was because these games hadn't been designed with the latency and bandwidth of the Internet in mind. But did these early conversion projects give a false impression of how difficult the development of online, multiplayer games would be?
Brian: Certainly there was a lack of experience on the part of designers at the time. People simply hadn't had to think about this stuff before. Back then, if a game had a multiplayer component, it was designed for use on a LAN with 100 times lower latency. Now designers are used to the limitations of the online world, there are more examples to draw from, and the pool of knowledge has grown considerably.

NG: What else has changed over the last two years?
Brian: Now the business model has shaken out, and this is perhaps the biggest lesson we've learned. Two years ago it wasn't clear what the proper business model for operating a service such as MPlayer was. Lots of options had been talked about, but no one knew for sure. We started out operating a subscription-based model that asked people to pay a sum of money each month for the privilege of playing games on our service. But now it's fairly clear to everybody that gamers don't like to pay — especially the hardcore gamers, who are clever enough to find ways of playing these games for free.

So early last year MPlayer took the fairly bold step of switching models and opening our doors to gamers for free and instead making our money by selling advertising space. And so I think the subsequent explosion of membership and the huge expansion of the service justifies this decision pretty strongly. It's now pretty clear what people are willing to pay for online gaming, and the answer is: not much at all [laughs].

NG: And you've found that gamers don't mind looking at ads while they're online?
Brian: As long as the ads are not too obnoxious, sure. And it turns out that gamers are a demographic that advertisers are very interested in. Typically, gamers are smart people who have pretty good machines and who upgrade frequently and like to buy a lot of games. And there are plenty of businesses out there looking to reach people like that.

Successes ...

NG: In what ways have the online gaming pioneers, such as MPlayer, succeeded?
Brian: Well, speaking for MPlayer, our service has dramatically grown — and so you have to view this as a success. We now have over 300,000 subscribers, which is an order of magnitude greater than what we had last time we spoke. This makes MPlayer easily the largest action-game network on the web — nobody else is even close. And we now have nearly 60 titles on the service, whereas two years ago we had just six or seven. We have also been able to broaden the array of games we offer.

NG: What do you offer now that you didn't offer then?
Brian: Although the majority of our business is still action games, our fastest growing segment is the nonaction games — things like checkers and hearts and other classics. And these simple, modest games account for a remarkably large proportion of our business.

NG: Why is this?
Brian: Simple. There are a lot more people out there who know how to play these games. And they can be played on a much larger range of machines with a much larger range of Internet connectivity performance.

If you want to play *Quake* on the Internet you'd better have a pretty good machine with a pretty fast connection, whereas you can play checkers on pretty much anything. It's also free. People can download it at no charge from our site in a matter of minutes, and bang — they're up and playing.

NG: Are you saying that there are more checkers fans than *Quake* fans?
Brian: **Next Generation** is a hobbyist magazine for hardcore gamers. It doesn't appeal to the whole population. Similarly, not everyone wants to play *Quake*, but everyone knows how to play checkers, and we're very happy to attract these people. Of course, this doesn't mean that we're going to abandon the action game. On the contrary, we're one of the few networks where the hard core can come and have a good action experience.

NG: So you're saying that there's room for all.
Brian: Right, and we're glad that our community is made up of gamers of all backgrounds. It makes the conversations in our chat rooms more diverse, and it makes MPlayer a more

interesting place to hang out.

... and failures

NG: In what ways have the online gaming pioneers failed?
Brian: My personal opinion is that although we have our *Quakes* and our *Red Alerts* and all this other violent stuff, it appeals to only a limited audience. I'm sorry that we haven't seen the multiplayer equivalent of *Myst* yet — and I'm not talking about an adventure game with beautiful graphics. I'm talking about a game that really breaks out into the mainstream. *Quake* is a big hit, but *Myst* completely blows it away. *Quake* is almost irrelevant compared to *Myst* and *Riven* in terms of sales numbers, and this is because it appeals to a much broader audience. And I'm a little disappointed that I haven't seen anyone working on the equivalent for online — something less action and violence-oriented, something a little more gentle, thoughtful, and peaceful.

NG: Do you hold out much hope?
Brian: Eventually this game will come. And I guess the card games and the classic board games currently take this audience. Microsoft's Internet Gaming Zone, although not a general web-based service such as ours, boasts some very impressive numbers of people coming to play these types of games. But it seems to me that there's plenty of room for expansion beyond the action and violent genre that seems to do so well. Our biggest failure is probably this lack of diversity.

NG: Do you think that this lack of diversity poses any threat to online gaming's future?
Brian: Certainly this lack of variety tends to ghetto-ize online gaming. And we don't want to end up in this "geek ghetto" of people playing only very high-performance and technically sophisticated games that, to an outsider, are almost indistinguishable and, to many people, impenetrable. (Oh, and by the way, I use the term geek in the most loving way — I'm a geek too.)

Let me give you an example. MPlayer is currently in negotiation with a very large hardware vendor to co-organize a nationwide gaming tournament. At first we thought about doing it with one of these very large, extremely well-known and popular action games. But we soon realized that for the mass market — the real mass market — this game was completely inappropriate. The fact is that to most people these action games are, frankly, juvenile — and almost pornographic. And this isn't to put down these games because they serve a specific segment very well, but beyond this small market, no one wants to pay any attention to them.

NG: So what game will be used for the nationwide tournament?
Brian: We'll probably end up doing it with golf, or something like that.

NG: In defense of violence, surely online gaming isn't yet for everyman. There are all sorts of limitations besides content keeping mainstream America from joining in the fun.
Brian: As long as you require a computer and an outlet to plug it into, then sure, there will always be restrictions. But since the time we last spoke the number of people with the ability to join in has increased by a factor of six or seven times. And it continues to escalate. Pretty much everyone I know has an email address now. And because the web pretty much offers something for everyone, most people have a reason to make the investment needed to climb on board. People don't need convincing as much anymore.

And this year the market is going to be opened up still further. This year we're going to see complete, powerful home computer systems available for under $1,000, and this is going to blow the market wide open to people who simply could not afford to jump on board before. Go into a CompUSA or any other large computer store and you'll find it packed not with geeks, but with normal people who want email, want to get online, and are now being offered an inexpensive entry.



Do we have the technology?

NG: What are the technological hurdles confronting online gaming's progress in 1998?
Brian: Connection bandwidth is still the huge issue. It hasn't improved much in the last two years, and it doesn't show much signs of getting much better anytime soon. We were dealing with hardcore, early-adopter 28.8 users back then, and we're dealing with more mainstream 28.8 users now. Even when 56K modems are out in big numbers it won't make much of a difference — the latency is still as horrible. If anything, it's even worse.

NG: So are we stuck at this level of bandwidth for the foreseeable future?
Brian: We've reached the technology threshold of what analog modems can deliver. And it's now clear that we can't look to the widespread introduction of digital modems for years to come. It's sad but true that the infrastructure problem is so huge and so expensive to fix that multiplayer games will have to be designed for 28.8 modems for the foreseeable future.

NG: So what's the solution?
Brian: Now it's a question of applying our engineering smarts to the games themselves.

NG: Are you happy with the way home system specifications have continued to rise?
Brian: Oh yes, and this has to be good for games. Two years ago a P90 was pretty good, but now you can't buy them anymore [laughs]. Today a P160 seems to be the standard, and here in the valley it's more like P180 or P200. Three-D acceleration is beginning to kick in with certain titles, and that's good also.

NG: What needs to be improved further?
Brian: One thing that we're not seeing adoption of fast enough is good microphone technology. We've always had

voice chat, and a lot of people use it but not as many as ought to be using it. And the reason is that a lot of people don't have mics hooked up, and if they do they're really awful mics. We're doing what we can to push this forward, but it's not happening as fast as we would like.

NG: What other big technological issues remain to be faced?
Brian: Today, mainly it's just growing pains. It's the simple issue of, say on a good weekend, having many thousands of users on our service at the same time. And juggling all these people simultaneously is very challenging. And as our service continues to expand, the situation continues to become more complex.

I'm sorry that we haven't seen the multiplayer equivalent of *Myst* yet

Also, in the last two years, people's expectation of their ISPs have gone up. Two years ago you could get away with running a fairly shabby ISP service, but not anymore. In this time a lot of ISPs have had to get their act together. People demand a much higher level of service now, and the ISPs — ourselves included — who can't deliver risk going out of business.

The Ultima Online experience

NG: So that's the technological issue outlined. But what game design issues stand in the way of online gaming's progress? Surely *Ultima Online* has to be seen as the trailblazer in this department.
Brian: *Ultima Online* has sold many, many copies and Origin is probably very happy about the sales. And despite the fact that it's been a very expensive project, I'm sure that in the long run Origin will be very happy that it was willing to pioneer this area, as will the countless people who will follow in its footsteps, of course.

NG: Do you think *Ultima Online* will be a profitable venture for Origin?
Brian: *Ultima Online* will probably be the biggest product in its history. And you've got to remember that *Ultima Online* isn't something that will close down in a year or so. *Ultima Online* is forever.



NG: And do you think that gamers are having a rewarding experience with it?
Brian: Right now, it's the early adopters who are taking the arrows in the back for the sake of pioneering. The early adopters are putting up with the horrific latency issues, system blackouts, and all the other stuff. But what Origin is doing is really, really difficult — and you have to respect that. People have accused them of biting off more than they can chew, but this is just Richard Garriott's way of doing things. This is the way he works. And Origin should be happy to allow him his head because they've sold every box they've manufactured, and it will surely be one of their — and EA's — biggest-ever products.

NG: So you admire what Origin is doing?
Brian: Absolutely. Of course, even *Ultima Online* has its predecessors with all the text MUDs and so forth, but Origin are the first people to come out with anything even approaching this scale and level of complexity.

NG: Would you agree that a perpetual, huge, game world such as *Ultima Online* remains the Holy Grail of online gaming?
Brian: There are many Holy Grails, but certainly *Ultima Online* is as near as we currently get to a virtual world, and for many people, this remains the most exciting vision of what online gaming will be.

Visions of the future

NG: Beyond providing a compelling gaming service, what will determine MPlayer's success or failure in the future?
Brian: A large part of our future success will depend on how well we get people to invest in MPlayer as a community. That's the key to making our service really big. I mean, 300,000 is a big number of people, but of course we're gunning for three million. And to get there we'll need to make sure that we're recognized as not just the best place on the web to go play games, but also the best place to talk about them and hang out.

NG: What do you see as the single biggest reason to be excited by online gaming's future?
Brian: I'd say now what I've always said, and that is that online gaming — and everyone who's tried it knows — is just a lot more fun than single-player gaming. And this simple fact means that more people are going to join in, which means more money in the industry, which means more room for innovation and design, which means yet more and more fun.

It's inevitable that sooner or later, in terms of revenue, online multiplayer gaming will catch up with and eclipse single-player gaming. And as each new person hooks himself up to the Net, this day gets closer and closer.

NG: Where's it all headed? Many years from now, what will online gaming have evolved into?
Brian: I believe that the line will continue to blur between the traditional, linear media, and the interactive media. The home computer, clearly, is already becoming the new fireplace in people's homes. The TV is still much much more popular than computers, but its popularity is beginning to wane. There is overwhelming evidence to suggest that as people buy and get into computers, they spend less and less time watching TV.

People only have so much disposable time, and they are beginning to spend this time on the web. They're surfing, they're sending email, and they're playing games. And this is eating away at the traditional media, and it's going to have a profound effect on the way entertainment dollars are spent by both consumers and entertainment companies. Advertisers ultimately call the shots, and they've already identified this trend. And at this point, it's pretty much irreversible.

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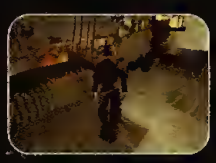
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NEC announces the next generation of PowerVR: A bigger, better 3D board is coming to a PC (and maybe a console) near you • **Katana deal takes shape:** The full story, plus we've even got the scoop on the ultra-secret controller • **Backward compatibility for PlayStation 2?:** Hey look, stranger things have happened

news

We don't make the news, we break it

NEC announces the next generation of PowerVR

The latest salvo in the 3D acceleration war promises Model 3 power for half the price of Voodoo²

After months of speculation, PowerVR has officially announced its next generation technology — the same technology that will drive Sega's forthcoming Katana console as well as PC- and arcade-based 3D accelerators. "We didn't want to jeopardize sales by preannouncing," says Charles Bellfield, product manager of PowerVR for NEC Electronics, which along with VideoLogic helps form "virtual company" PowerVR. Along with the technology will come a new, aggressive strategy for dealing with perceived market leader 3Dfx. "3Dfx certainly has had mindshare," says Bellfield, "but if you look at the facts, we're neck and neck in chip sales." According to analyst John Peddie and Associates, 3D acceleration chip sales for both companies were almost even through Q3 1997 (the last quarter for which information was available).



Consumer-level 3D add-in boards featuring VideoLogic's PVNG technology will offer performance in excess of Sega's Model 3 arcade board at roughly 1/60 the price — ah, ain't technology grand?

The major advantages of PowerVR's next generation technology, called PVNG (the company is adamant that it not be called PowerVR 2), are power and low cost. It is not an exaggeration to say that the technology will provide Model 3–level performance for less than $100. Matrox's current PowerVR–based Matrox m3D retails for $99 and comes bundled with two full games and 20 demos. PowerVR hopes its next generation product will retail for that price or less. The company also says that it has fixed developers' biggest problem with the technology — the difficulty of developing for PowerVR's plane-based technology. The low cost also means that Sega should be able to ship Katana for a sub-$199 launch price, including 16-24MB RAM and a modem (see page 18).

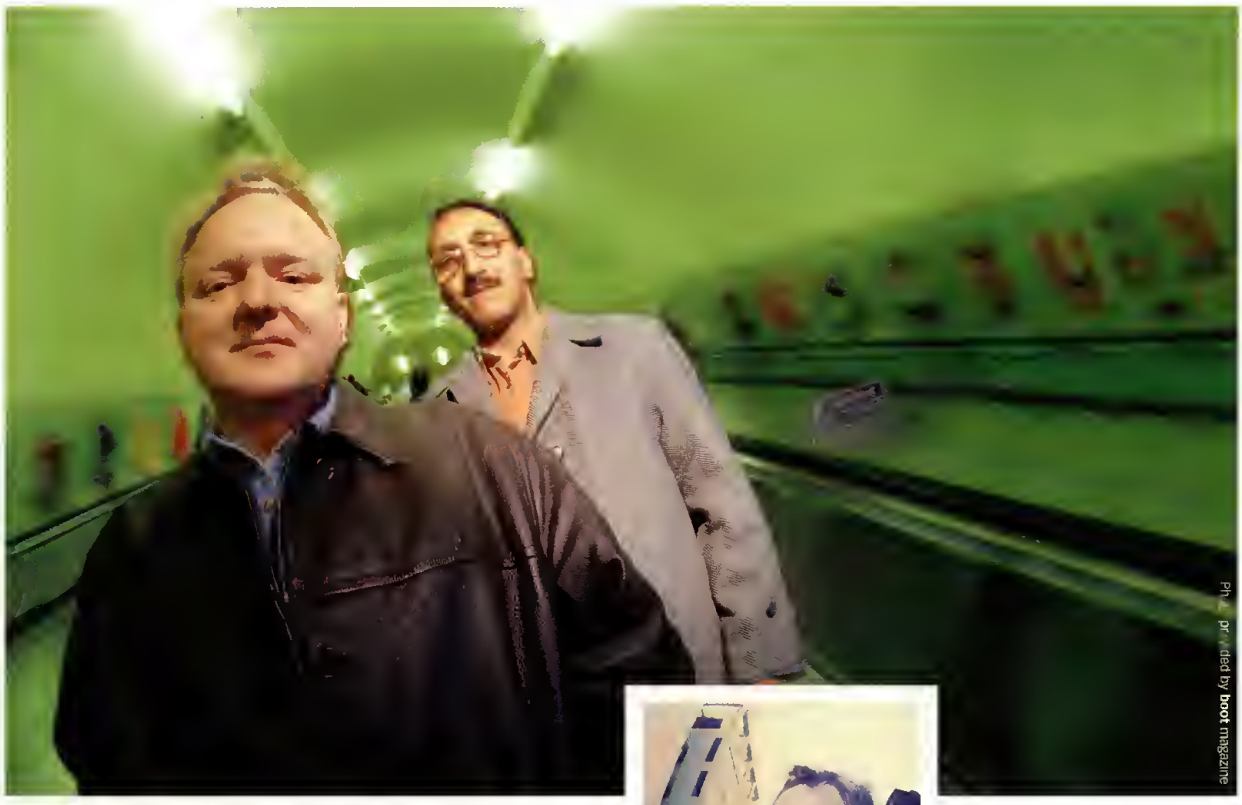


Photo provided by boot magazine



NEC's product manager for PowerVR, Charles Bellfield (pictured above, backed up by VideoLogic's Hossein Yassaie), insists NEC's Infinite Plane Technology is a better, more scalable approach to 3D acceleration

The technology will be available in a five-chip product family, although Bellfield is quick to point out that "they all have the same basic architecture and technology. The difference is in bus architecture and the addition of different modules to work with different processors." According to Bellfield, porting projects based on one chip (like the arcade chip) to another (like the console chip) will be "trivial." Product names were not available at press time, but the differences and applications for the chips break down as follows:

• Chip one: 3D-only solution. This will be for add-in boards, not unlike today's Matrox m3D, and will feature the PVNG technology. Expect Matrox to deliver a board based on this chip in the first half of 1998.

• Chip two: 2D/3D solution. It will be available in PCI or AGP forms and will support AGP 2X with Sideband.

• Chip three: This is the console-level chip that will be used in Sega's Katana project. The chip is optimized to work with non-Intel processors, including NEC MIPS processors and Hitachi chips. Katana is expected to use a Hitachi CPU.

• Chip four: This is the arcade solution. It will be optimized for MIPS processors and Intel processors and should be PCI based. It will comply with Intel's Open Arcade initiative and should see use in PC-based LBE applications.

• Chip five: This chip is distinct from the others in that it features an onboard co-processor for the geometry engine, which should deliver super-high performance.

Although no announcements have been made, **Next Generation** expects the arcade-level chips to be used by Sega, and possibly Namco, in forthcoming projects. Considering the ease of porting, this raises interesting questions about the possibility of Namco developing for Katana. Namco, Sega's biggest arcade competitor, has not developed for a Sega home machine since the Genesis.

The advances over PowerVR's previous technology

continued on page 55

Who is it?

In 1984, Nintendo introduced this short, buck-toothed gardener into the same arcade series that would eventually make Mario and Luigi superstars.

Katana deal takes shape

More details emerge on Sega's console, including the controller

More information on Sega's next generation Katana project has come to light, including news on what may be the most innovative element of the system, the joypad.

According to a source close to the project in Japan, the pad will feature an analog controller on the left with buttons on the right. No decision has been made about the addition of a digital pad, but if one is included, expect it to be under the analog controller (similar to the 3D control pad that shipped with *Nights*). Like Nintendo 64, the pad will also house 256K memory carts.

But what's really impressive about the controller is that it will have a small LCD screen installed. For monitoring memory cart usage, the screen, which has "Tamagotchi level" resolution, can also be programmed, according to the source. This opens up a huge number of possibilities for games. For instance, players will be able to make private selections of plays in sports games (finally) or choose special moves or weapons in fighting games. This could quite possibly be the most exciting feature of the controller.

As noted before, developers will have a choice of OS. Microsoft will supply a modified form of Windows CE 2, known as Dragon, which features an updated version of DirectX 5, and Sega will provide a smaller, "close to the metal" OS, code-named Atlas, which will feature a Sega-created graphics library called Ninja. Software emulators for Dragon were to have shipped in late January, with Atlas arriving with developer hardware in March.

According to sources, the type of PowerVR processor used in Katana will have more dedicated processors than the type used in PCs (see page 16 for more on PowerVR).

The dual OS strategy has some developers upset. "Developers will need to choose an OS early in development, and they run the risk that an update to the other OS will ship before their game is done, which would suck," said one source. Using Microsoft's OS may seem to be a no-brainer, though, since it will enable easy porting from PC projects. Dragon will take up at least 1.3MB of the 8MB main memory, "and the guys at Microsoft say that is a very optimistic projection," said the source. The option for Katana to ship with 16MB of main memory is still open if other costs can be kept down, which would make using the Dragon OS more palatable for developers.

According to other sources, there has also been some debate about whether Dragon's 3D features should more resemble D3D or PowerVR's SGL API, with Microsoft pushing for D3D and some developers pushing for SGL. "It's hard working with Sega and PowerVR and Microsoft because they each talk to you, but you're not allowed to tell any of the others that you talked to anyone," the source said. "The relationships between the first-party partners is clearly still developing." Despite these challenges, most sources **Next Generation** has talked to are extremely enthusiastic about the prospects for the console.

Originally a Christmas 1998 release was planned, but with developers not getting boards until March, that date has now slipped to April 1999.

It is ...

Stanley the Bugman, protagonist of *Donkey Kong 3*, who repelled Donkey Kong and other enemies with insecticide. The change from platform to shooter never caught on, and Stanley disappeared into oblivion.

Other **Sega news**

In preparation for the lull between the death of Saturn and the launch of Katana, Sega of America announced a 30% staff layoff. At the same time, the new project was officially confirmed, and Sega Enterprises vice president, Shoichiro Irimajiri, was promoted to president. Irimajiri joined Sega in 1993 following a 30-year career at Honda. Beginning in July of 1996, he served as chairman and CEO at Sega of America, where he was brought in to repair Sega's U.S. operations. Opinions vary as to how successful he was in this endeavor.



The new president of Sega Enterprises, Shoichiro Irimajiri

Former president Hayao Nakayama was promoted to vice chairman of the board of directors, but it is believed that he will have little control over day-to-day affairs. Nakayama has been criticized in recent months for Saturn's lackluster performance in the international market, as well as the failed Bandai merger.



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TRUE
(GO TO PAGE 52)

or

FALSE
(GO TO PAGE 27)

In the Studio

Better development news from even better sources

DreamWorks is working on a character-based, jumping/fighting platform game called *T'ai-Fu*. This PlayStation game will use a new iteration of *The Lost World* engine that will enable the main tiger character to move in 3D. The game is being developed internally under the direction of Lyle Hall, designer of the original *Gex*. It is due out Christmas '98.



Coming to tha arcada, courtesy of Sega's AM2 development branch, is *Fighting Vipers 2*. Two characters have already been revealed. There will be a dark-haired thuggish brawler with strange bolted armor, and Honey will also be returning, with maid outfit and angel wings intact. The game will build on the Model 3 board, the same one used to create *Virtua Fighter 3*.

While Atari Games has been extremely tight-lipped about future coin-op titles, it has been leaked to **Next Generation** that the company is working on a 3D *Gauntlet* game for the arcade. The four-player adventure will once again offer the Elf, Fighter, Wizard, and Valkyrie characters. The style of gameplay will remain faithful to the original, with numerous exits. However, boss characters have been added, as well as new cooperative techniques. The game will be played from an isometric three-quarter-overhead perspective, and the team is working on over-the-shoulder views as well. It is expected to be finished for Christmas of '98.

While not officially announced, GT is hard at work on a Major League Baseball game. Not all the licenses have been signed yet, but it appears all-star Dodgers catcher Mike Piazza will endorse the game. In each of his four Major League seasons, Piazza has earned a spot in the top ten MVP vote-earners.



Accolade is hard at work on a new third-person action/adventure game for the PC. It is due out this fall, and the company is already considering licensing the engine to other developers.



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Backward compatibility for **PlayStation 2?**

Rumors suggest that the new PlayStation may be capable of running current 32-bit titles

Although Sony has not confirmed any details on its next generation platform, rumors circulating within the industry suggest that the new console may be backward compatible with the current PlayStation.

Sony has not yet experienced the trials of releasing a console update. "Sega and Nintendo are waiting for that transition," says Matthew Seymour, senior producer at Blam. "That is when a company is at its weakest." In fact, the best case of generational transition was Nintendo's switch from the NES to the SNES, during which the company lost half its market share to Sega.

Backward compatibility has always been on consumer wish lists, and one school of thought is that the ability to play one's existing library of games — even if one never does — can be a powerful factor in making a purchase. No console has been backward compatible since the Atari 7800 (although the Genesis had a Master System add-on), so the ability to play current 32-bit games may be an asset to Sony in its next generation fight.

But backward compatibility could also hinder Sony's next platform. First, it may be harder to market a backward compatible system; it could come off sounding as if it's only an upgrade. It would also be difficult to convince developers to use the advanced features of such a system rather than developing for the lowest common denominator (a problem Commodore encountered with the C128). From a technological standpoint, Seymour considers backward compatibility "a definite negative that would compromise the technology."

Will consumers (or Sony) be willing to absorb the extra cost of any additional hardware required for emulation? They might not have to. "I have seen some terrific emulators on the PC that would suggest that a backward compatible system doesn't have to stem from [additional] hardware," says one developer. Sony's new architecture could be powerful enough to emulate the hardware of the current PlayStation by simply redirecting processor calls.

Sony refuses to comment on the speculation. "We have no plans to change our technology," says Phil Harrison, VP of third party and R&D at SCEA, "so it is inappropriate to speculate about what features may or may not be part of our future product plans." Can any company survive a generational change and stay on top? Backward compatibility may be a deciding factor. ng

Cribsheet

Stuff every gamer should know. This month, Amiga — the computer that made Psygnosis and Bullfrog household names

No.14 Commodore Amiga

What is Amiga? Amiga was a company originally founded to create software and hardware for the Atari 2600. It created the Joyboard, a special controller that tracked the user's feet movements to control games. *Surf's Up* was the first game to use the Joyboard. **What's so important about that?** Not much. It was the company's next project that put it on the map. Some time after releasing the Joyboard, Amiga began the groundwork for a special project named Lorraine, a 16-bit multimedia computer based on the Motorola 68000 processor. The project was passed up by Atari and finally landed at Commodore. Lorraine was renamed the Commodore Amiga and released in 1985. **What was so big about the Commodore Amiga computer?** Jay Miner, an ex-Atari employee, along with RJ Mical and Dale Luke, created this powerful and inexpensive alternative to the PC and Macintosh. It was the first machine to integrate hardware multitasking with stereo sound and 4,096 onscreen colors. The Amiga, along with EA's software, Deluxe Paint, quickly became a favorite tool among developers to create sound and graphics for systems like Super Nintendo and Sega Genesis. In Europe, the system was also well-regarded as a game machine. Psygnosis, Bullfrog, and DMA Design all released their early hits on the Amiga. In the United States, the computer mainly found acceptance as a low-cost video and graphics workstation. **Low cost meaning low quality, right?** Not at all. Some very well-known TV shows have used Amigas extensively: All the special effects in the first season of "Babylon 5" were produced on Amigas. And although the computer was mainly used for 16-bit development, all the rendered scenes in *D* were done on an Amiga. **Wow, low cost and high power. The guys who made it must have been something, huh?** They are. Collectively, Miner, Mical, and Luke developed Amiga, Atari's Lynx, the 3DO, and M2. Mical also created *Sinistar* for Williams. **Hmmm ... if the Amiga was so great, where is it now?** Unfortunately, Commodore never had enough cash to adequately market or support the machine, and although there are still many Amiga fans worldwide, it gradually faded as PCs advanced. Commodore shut down the Amiga division on April 26, 1994, and filed for bankruptcy three days later. **Is that the end of the story? Where is Amiga now?** There are still many user groups nationwide that support the machine, and many television studios only recently discontinued their use of the Amiga as a special-effects machine. Gateway has since purchased the Amiga technology, but its intentions for the hardware are not yet known.

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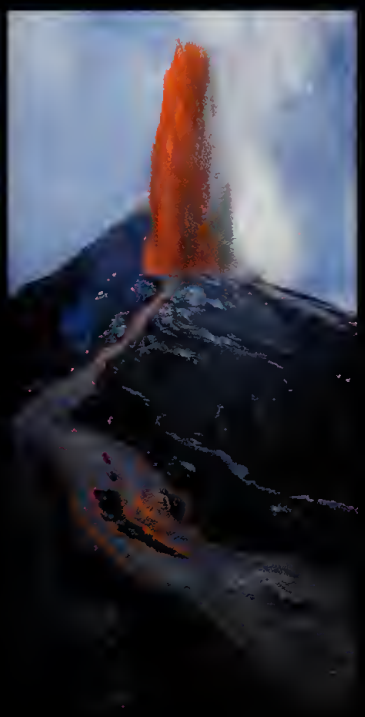
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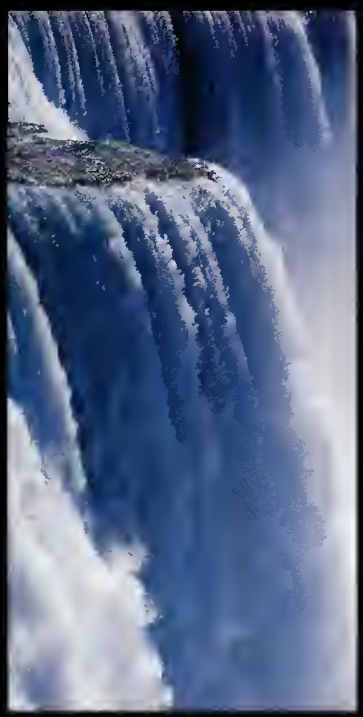
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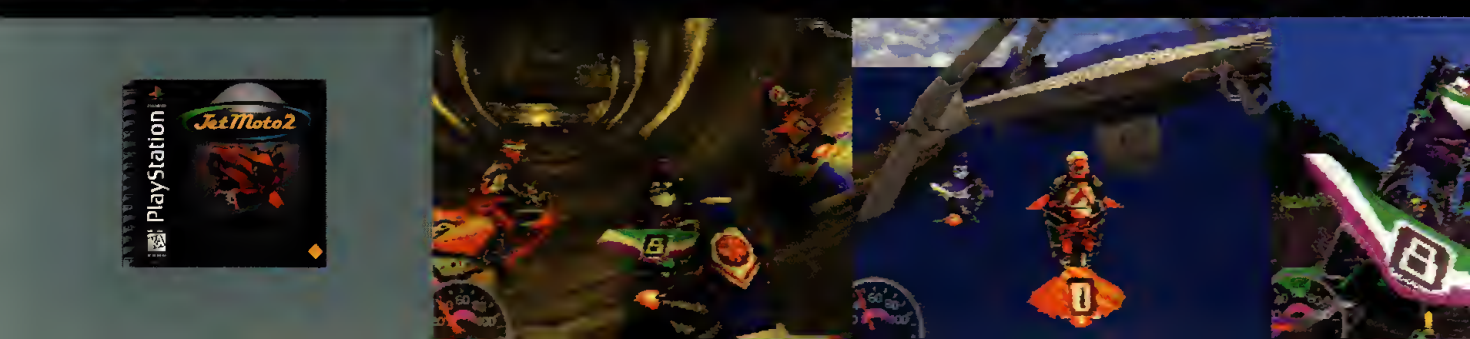
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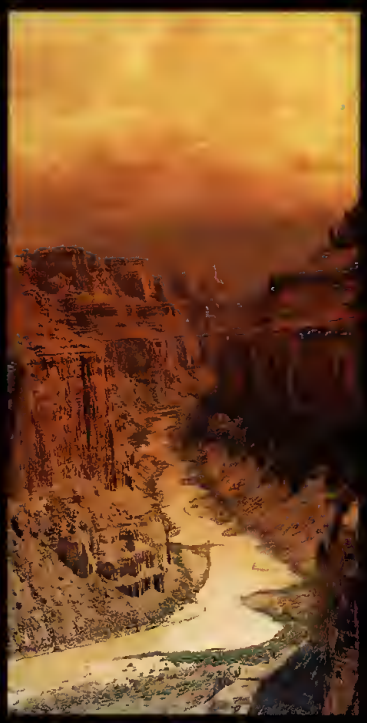
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Movers and Shakers

The business news that affects the games you play

Developers unite!

by **Colin Campbell**

Colin Campbell is **Next Generation**'s International Correspondent



Like all modern industries, ours is populated by a mixture of gray Dilbertesque walking cliches and bona fide colorful characters. Mike Wilson most definitely falls into the latter camp.

His exploits at Id and Ion Storm are well-documented, as is his latest creation, Gathering of Developers. He would head any league table derived of column inches generated plus units sold.

His skill is not only in doing his job, but in getting people talking about the industry and specifically, about what he thinks is dysfunctional about the business. He apparently understands how to titillate readers and therefore how to please journalists. This is in contrast to the great many talking heads in this industry who believe that cooperation with the press means spouting cowardly drivel designed not to offend stuffy overlords on Wall Street and in Tokyo.

Gathering of Developers is apparently a new idea. Games will now be published by people who understand games — a glorious democracy of the knowledgeable and the intimate, working to bring unadulterated gameplay to the great unthrilled.

There are some big assumptions at work here. Firstly, there's the almost sacrosanct belief that big game companies are headed by clueless suits who "don't understand" games. Second, that a democracy of game makers can do a better job in bringing games to market than a hierarchy of marketeers, financiers, salespeople, and, yes, developers.

Wilson has no qualms about specifically backing his claims about what's so wrong and how he's going to put it all right. "The power, like in any entertainment industry, is with the talent," he says. "It has become painfully obvious to me that there are no publishers out there who truly understand the development side of the business or what exactly is a good game, for that matter. The problems are inherent in every major publisher out there. Regardless of their 'happy talk' philosophical discussions about being a 'partner' with their developers, there is a definite lack of trust and understanding on both sides.

"The reason for this is that both sides are in business to make money, but their businesses and principles are from completely different worlds that clash a lot more often than they coincide.

"When a developer presents a product to us for consideration, they can rest assured that their game will actually be played and looked at by a group of experienced, successful developers, not some gray-hair straight out of Proctor & Gamble, or some 'edgy' young guy with gel in his hair, still carrying his brand new MBA around with him."

Cynics might suggest that as much as you want to believe Wilson's arguments, there's always the suspicion that his crusade is self-serving. Yes, there is mistrust between publishers and developers. Yes, there are some buffoons in positions of authority. But this does not mean that all of his competitors are, to use a favored word, "fools." Nor does it mean that simply identifying problems is the same thing as solving them.

His primary customers — gamers and developers — will lap up his well-worn opinions. But does Wilson really believe in these assumptions? Or does he know that they will ring true with the people he most needs to please, and they'll generate much-needed column inches?

At the heart of his vision is a democracy of sorts for development talent. But democracy is in some way short of a perfect system for governing nations, let alone corporations. It doesn't always work and indeed, it doesn't often work. Especially when great egos are rubbing against noble ideals.

If you look at the best developer's development houses, they are generally created and run by ruthless individuals who like things done their way. Rare, Bullfrog, and Id, at various stages in their lives, come to mind as absolute monarchies.

And the idea that the core suit-wearing, down-to-business publishers are failing to deliver is debatable. GT, EA, Activision, et al are more grossly Napoleonic than idealistically Athenian. Soldiers of different plumage perform their functions. Gray-headed suits and Armani-clad posers doubtless proliferate. But all these companies do manage to create great games. Someone in there by definition understands games. The system can hide incompetent people, but it apparently achieves its end.

And once the star chamber at Gathering of Developers has chosen and created the games it wishes to publish, will its marketing efforts be a grand departure from those already tried and tested? Highly doubtful. Wilson, as a skilled marketeer, understands that developers are not especially gifted in this department. Why should they be? My friend works in a marketing department and while admiring developers for what they do, is often infuriated at their ham-fisted attempts to interfere in the business of selling the things they create. The messages they want to project are often based on in-jokes or curious personal cultural runestones. They just don't get it.

The truth is banal. It's horses for courses. Developers should develop, and salespeople should sell. There are exceptions, but they generally prove the rule. If you have a God-given talent to make games, what will you spend your time doing?

Where Wilson's crusade rings more convincing is in his demand for developers to be recognized for their talents. "Gathering of Developers will always focus on branding the developers themselves. I have preached the sermon of 'brand the band, not the label' for several years now, and we certainly intend to practice what we preach in that regard. G.O.D. will likely be somewhere on the box, but the developer will be the focus.

"This is a particular hotbutton with several of the developers we've talked to. Many of them have created some major blockbuster hits but never got widespread recognition due to their publishers branding themselves rather than the developer. I have never understood this mentality. I mean, have you ever walked into a record store looking for the newest Capitol or Interscope release? No, you were looking for Alice in Chains or Green Day or whomever."

Marketeers have found it convenient to create their own brands because they do not trust developers, and because they do not want developers to be bigger than publishers. This is a situation that works, especially for the larger companies who have the biggest brands, but it's wrong. The people who make the games should be recognized for their talents. The people who play them should understand that the experience of enjoying the game is directly linked to the person who created it.

In this regard Wilson is bang-on target. We can admire marketeers and their creations, but they do not merit anything like the credit we reserve for the people who make the games. And if someone like Wilson can create profits from this obligation, all the better.



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FOR THE CORRECT ANSWER
GO TO PAGE 52.

VR SPORTS

VR BASEBALL™ 99

Joyriding

Gaming on the Internet



by **Christian Svensson**

Christian Svensson is the editor of **Next Generation Online**

Extending **Quake 2** gameplay

Quake 2 was clearly an incomplete game as it was shipped from Id's offices early in December. Reviewers from a host of magazines (including this one and **Next Generation Online**) have generally given the game positive reviews with the caveat that the multiplayer modes need work. There was no cooperative mode, no Capture the Flag, and network code was exceptionally buggy. (Id says it will produce a "point release" that will be freely available on the Net to address these concerns.) Minor faults aside, the best part of *Quake 2* is its extensibility. As they did with *Quake*, eager hobbyist developers have taken Id's technology and are creating mods and utilities that offer even more playability and variation than the original.

Eager hobbyist developers are creating mods and utilities that offer even more playability and variation than the original

If you have *Quake 2* and a modem, there are some things you shouldn't be without. The first and most important is GameSpy, a simple yet elegant 3D gaming utility that gives the CEOs of major online gaming services nightmares each night. In a nutshell, it lets gamers easily find and connect to servers to play games like *Quake*, *Quake 2*, *Hexen 2*, and *Jedi Knight* for free. Games that will be supported in the future include *Unreal*, *Prey*, and *Duke Nukem Forever*. With literally hundreds of *Quake 2* servers on the Net, you'll always be able to find someone to frag if you use GameSpy. Possibly GameSpy's most valuable feature is the automatic map and mod downloading. As new mods, multiplayer maps, and other add-ons become available, all you have to do is connect to the server and it will automatically download the files you need. This process is a little time consuming, but it sure beats hunting and digging for the proper BSP file on some FTP site. While the basic functionality is free, a $20 fee to register the utility adds chat functionality and preferential upgrades.

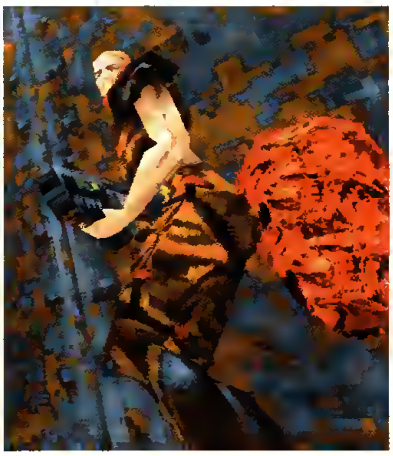


Getting up close and personal with people all over the world is made easy with GameSpy

Capture the Flag was one of the most popular mods for the original *Quake*, so it is not at all surprising that at least four homegrown CTF mods have been released pending Id's version in the point release (the best of which is Loki's Minions CTF at http://www.planetquake.com/lmctf/). It's as yet unknown how Id's version will differ from those created by hobbyists, but the basic premise should remain the same. Grab the other team's flag from its base and bring it to yours. To keep up with the latest *Quake 2* CTF news, check out http://www.quake2ctf.com/ or http://www.quake2.com/ctf/.

The Headhunters *Quake 2* mod (http://www.planetquake.com/headhunters/) is another that has made a successful transition from the original game. The premise here is simple: Kill people, collect their heads, and redeem them for points at the altar. The more heads you redeem at a time, the more points you'll score. Naturally, there's always the risk that you'll get gibbed before you can cash in, but then again, it's always neat to see all the heads you've collected go flying as a rocket inserts itself between your ribs. Luckily, this mod doesn't require players to download any new files, so you can connect to a Headhunter server and start collecting heads immediately.

[With the] Headhunters *Quake 2* mod, the premise is simple: Kill people, collect their heads, and redeem them for points at the altar



Collect the heads and score some points with the Headhunter mod

One of the more interesting *Quake 2* mods (and one you knew just had to be done) is the Battle of the Sexes (http://www.quake2.com/spinoza/). You can play male or female characters, all of which have different abilities. Men can't jump as high as women, and they only have a 150 health max as opposed to the female 200. Women have a rapid fire blaster option, but men have a rapid fire rocket launcher. Women can only wear jacket armor and carry half the ammo that men can. Additionally, there are different classes, each of which uses different weapons and special abilities, including trackers, proximity grenades, etc. Snipers can use silenced railguns, medics can regenerate health points, and much more. This version of the game can be played as either a deathmatch or as a team game. Of all the *Quake 2* mods currently available, this is my favorite.

On the horizon, expect to see a brilliant version of my personal favorite original *Quake* mod, TeamFortress (http://www.planetquake.com/teamfortress/). "Yes, we are working on TeamFortress II and have been for a couple of months now," the designers report. "The design is 90% completed, and classes, weapons, etc. have been decided." TeamFortress is similar in theory to CTF with specialized fortress maps, but there are loads of character classes, all with special abilities and characteristics.

While Id did ship an incomplete game with *Quake 2*, the company has made good on its promise to fix what was wrong with it and continues to enable outside developers to extend the game's life with their own designs and modifications. I'm sure this won't be the last time you see this column touching on the finer points of *Quake 2* mods and utilities, as the future looks exceedingly bright. ng

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Arcadia

The latest arcade and coin-op news



by **Marcus Webb**

Marcus Webb is the editor of ***RePlay*** magazine

It sure beats a D

On November 25, 1997, the arcade industry got its annual "report card" from Senator Joe Lieberman (D-Connecticut) and Senator Herb Kohl (R-Wisconsin) on providing videogame content ratings. The industry's grade. Incomplete. Not a passing grade yet, but it sure beats the previous year's dismal D. Better still, the senators plan to call a press conference in February to praise and encourage the industry for what it has done so far. Arcade owners and game manufacturers have worked out a content rating system and have begun taking steps to implement it. A sort of "green light, yellow light, red light" symbol scheme, along with words indicating language, violence, etc. will appear in the Attract mode of new arcade videogames. The same symbols and words will appear in sticker form on older games. But, in order for parents (and senators) to feel reassured that players know what those ratings mean, arcades will be putting up 18x24" posters explaining the symbols, starting this month.

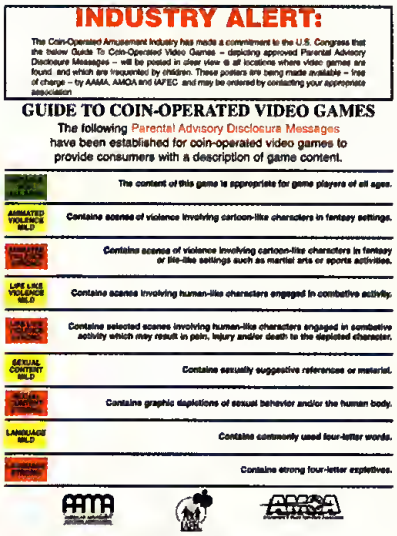
Japan's results mixed at fiscal midyear

After issuing more positive numbers at the end of their first quarter, several Japanese videogame factories have announced declines in profits at the midyear point (Japan's fiscal year ends in March). Sega's midterm revenue was down 27.5% with net income down 16.5% from a year ago. (Sega's arcade game sales revenues were actually up 6.6% and arcade operation revenues rose 8.3%, but home video sales plummeted 63%.) Taito's gross earnings dropped 3.2% compared to the same period last year (even though coin-op game sales revenues rose by 35%, with all the increase in domestic trade; coin-op game exports fell 48% and Taito also plunged 55.2% in home video sales). Konami's gross was up significantly (46%), but net was down (24.4%), with coin-op game sales growing by 30% (including export sales, up 48%) and photo sticker machine sales up 76%. Capcom was one of the few to report both higher gross (up 3.3%) and net (up almost 10%). It made more money in videogames but less money in the movie business, compared to last year. Namco was also in the sunshine column with grosses up 7.1%. Namco's net income was down 25% on paper, but as Japanese trade publication *Game Machine* stated: "This was because the previous year's results involved a large CB conversion profit. The company's business performance is basically climbing upward."

New games coming

Sega was expected to show *Winter Heat*, a system update for its Titan universal system upright cabinet, at January's London-based trade show. The game lets players swoosh through eight types of skiing challenges, including speed, jumps, downhill, short track, alpine, slalom, bobsled, and cross-country. Players also choose their character's nationality. Two new titles for Sega are *Motor Raid*, a sit-down simulator of motorbike racing, sold as an update kit for *Manxx TT*, and *Behind Enemy Lines*, a two-player deluxe gun game along the lines of *Gunblade NY*. Trade talk says this is a rename of *Hummer*, which was shown at trade shows in early 1997.

Namco's next title, *New Weapon Fighting Game*, features characters and weapons like those seen in *Soul Edge*, the same team developed both titles.



Gamers will soon see these content rating posters plastered all over arcade walls

Coming soon to an arcade near you is the most creative, original videogame in years. Konami's upright game *Hip Hop Mania* has the player assume the part of a DJ, using a real keyboard and turntable as the controls. Players must match rhythm with the onscreen notes to complete different songs, which cover genres like hip-hop, reggae, soul, house, and rave. We saw a similar concept in prototype for the home market a few years ago; guys and gals alike went wild, and it's always been a mystery to us why nobody brought this idea to the arcade. Now Konami has.

Namco wins the wild and crazy award for an arcade game that's all the rage in Japan. *Star Audition* is a digital photo vender that lets players do an acting audition on the spot. Onscreen instructions prompt: Look happy! Look sad!, etc., and a built-in camera snaps their facial expressions. Through Namco's ties with the Japanese entertainment industry, real talent scouts sort through the stills and contact promising wanna-bes for live auditions. We understand a real superstar of tomorrow may emerge in Japanese pop culture from *Star Audition*. No word on any U.S. plans for this concept.

Bromley and allies launch TV/Internet game biz

Three arcade videogame veterans — Mike Singer, Larry Brody, and Lauran Bromley — have launched a new venture called Vega Universe, a free game network that will offer family-appropriate games over a cable and satellite-based TV superstation (as well as its own Internet web site) 24 hours a day, seven days a week. The TV and Internet sides of the business will cross-promote each other. It will also offer CD-ROMs, CDs, and videotapes. The TV network will offer televised gameplay from the web site with commentary, along with shows like "The Sunday Night Movie" and "Zork: The Animated Series." The web site, for its part, will offer games and tournaments, brainteaser shows, and female-friendly content; programming will change daily. The venture's web site address is www.vegauniverse.com.

Not on track

In 1997's fourth quarter, California's two motion theater giants — Showscan and Iwerks — indicated they may not be merging after all, despite the early-'97 announcement of plans to do so. The merger deal is "moving forward; I can't say it's definitely going through," admitted a Showscan spokesman. This statement came in the wake of lower-than-expected second quarter results by Showscan. It registered a net loss of $992,000 on turnover of $2.5 million for the quarter ending September 30, 1997.

Reportedly $20 million in debt, PlayNet Technologies has closed its New York office, and we were unable to reach its California offices. PlayNet, led by Atari founder Nolan Bushnell, made a big splash in 1996-7 as the most glamorous of the Internet arcade startups. Trade reports say Holiday Inn has canceled the proposed test of upgraded PlayNet web countertop-style videogames with Internet connections.

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Retroview

Anecdotes from computer and videogaming's past

by **Steven Kent**



A frequent contributor to **Next Generation**, Steven Kent is the author of a forthcoming book on the history of videogames

The **rise and fall** of arcades (part 1)

Though most agree about the rise of arcades, there's some disagreement about the fall. Arcade owners and game makers, businesspeople who see games as financial investments instead of works of art, date the fall of the arcades as 1982. Gamers, caring more about the quality of games than the money they earned, say the arcade fell in 1983 or possibly as late as 1984. As it turns out, both sides are correct.

The **rise**

Arcades were around long before Nolan Bushnell released *Computer Space* (the first coin-operated videogame) in 1971. Arcades were dingy places before videogames. Most adults avoided arcades and the people who went to them.

Now in those days arcades were small in number and small in size and mostly existed in the central city areas. They generally tended to be a little down at the heels. They generally attracted young people, just as they do today, but they also had a Coney Island image that would attract drifters.

— Eddie Addlum
publisher, *RePlay* magazine

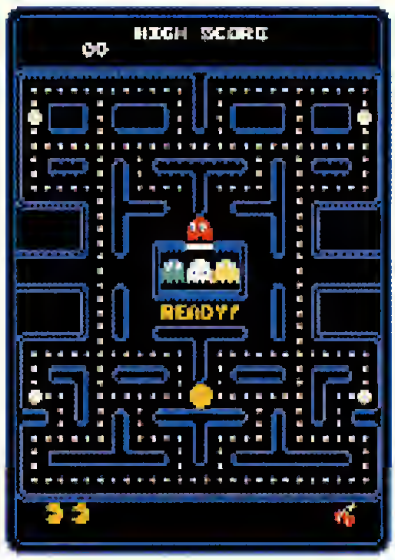
Three events changed the fate of arcades The first was the release of *Space Invaders*. *Pong* and *Seawolf* did good business, but nothing could have prepared the world for the success of *Space Invaders*. In Japan, for instance, several small produce stores stopped ordering product, cleared their floors, and converted themselves into *Space Invaders* parlors. The game was so popular, in fact, that Japan experienced a coin shortage as 100-yen pieces (the coin used in Japanese arcade machines) began piling up in coin boxes and change machines.

The next big event was the creation and subsequent popularity of Chuck E. Cheese, the pizza parlor/videogame arcades pioneered by Bushnell. Behind Bushnell's leadership, arcades took on a new respectability and even achieved family-friendly status.

Opening a videogame arcade in the '70s was like opening a pool hall. It wasn't something malls wanted per se. Nolan always wanted to create something he could get into a mall that would have a lot of games.

— Al Alcorn
first engineer, Atari

The third event was the 1980 release of *Pac-Man*, the most popular arcade game of all time. Midway placed more than 100,000 *Pac-Man* machines around the U.S. and Namco placed another 250,000 units worldwide. (That figure does not reflect the huge number of pirated *Pac-Man* machines sold at that time.) Driven by the success of *Pac-Man*, *Donkey Kong*, *Ms Pac-Man*, *Galaxian*, *Centipede*, *Tempest*, and a number of other great games, videogames became one of the most lucrative forms of entertainment in the world. In 1981, Americans dropped more than 20 billion quarters and 75,000 man-years playing arcade games!



Videogames were everywhere. They appeared on the cover of *Time* and *Newsweek*. Two motion pictures, *Cloak and Dagger* and *Tron*, were written around the videogame phenomenon. President Ronald Reagan even referenced the amount of money Americans spent on videogames as justification for supporting the Nicaraguan Contras.

It wasn't just the games themselves that were on fire. The entire arcade business had gone wild.

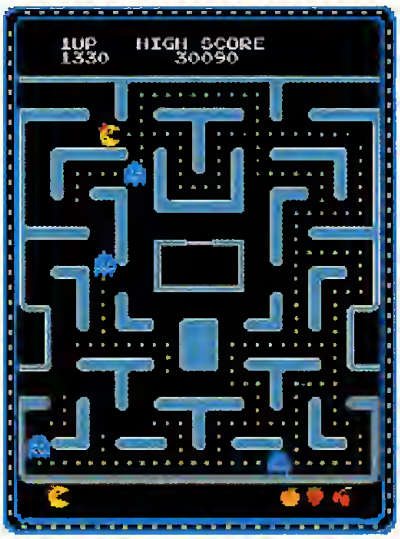
Games such as Pac-Man, such as Space Invaders, were going into virtually every location in the country, with the exception maybe of funeral parlors, and even a few funeral parlors had videogames in the basements. Absolutely true. I believe churches and synagogues were about the only locations to escape the videogame.

— Eddie Addlum

Arcades became more common than grocery stores in the United States

Videogames popped up everywhere. Fancy hotels placed games in their lobbies and arcades in their mezzanines. Arcades became more common than grocery stores in the United States. There were enormous superarcades — arcade/funcenters that featured videogames, go-carts, and miniature golf. There was even a black-tie arcade in New York called Bagatelle.

The financial high-water success of videogames came in the form of *Ms Pac-Man*, a game that was developed in the United States by designers at Midway. Midway sold 119,000 *Ms Pac-Man* machines to U.S. arcade owners (it was unpopular outside of the U.S.). It was common to have huge rows of *Ms Pac-Man* machines in large arcades. Unfortunately, these heady days didn't last. Within a year, arcades fell with the same meteoric velocity with which they had risen. But that story is for next month.



Both *Pac-Man* and its superior sequel, *Ms Pac-Man*, helped make arcades a big business

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Paul Davies is a Senior Animator for Red Orb Entertainment, a Division of Broderbund Software, Inc. Their latest project is an upcoming real-time strategy game called "Warbreeds."

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What Kind of a Maniac Takes a Semi









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How to get a job in the



game industry



"What do you want to be when you grow up?" This was the question we were all asked as children. At that time it was unreasonable to say "videogame producer" or "3D artist." But things are different today ...

ng special

Playing games is fun, but few people who work in the game industry would describe making them that way. Working on the same game, day after day, for literally years, gets old quick. There is never enough time or money to make the game you really want to make, and achieving any level of recognition or success takes many years. The hours are beyond long, burnout is common, and unless you're one of five or six "name" designers, the chances you have of ever fully exercising your creative vision are nearly nil. And if you're successful? Welcome to management, where you'll never get a chance to work on a project again. Oh, and did we mention the troubles competitive products, inept management, and technological problems cause? It's no wonder that fewer than half the projects started ever reach the boxed software stage (where, statistically speaking, they have only a slight chance of making a significant profit, so forget about royalties).

So why make games? Because the satisfaction of having completed a product in what is surely the most engrossing entertainment medium on Earth is worth paying any price. Watching people pick up your box in Electronics Boutique or reading posts on Usenet asking for tips to a game — your game! — is a feeling that is simply unparalleled. Perhaps Rob Zdybel put it best in Howard (*Yars Revenge*, *ET*) Warshaw's excellent documentary, *Once Upon Atari*. "If you take 1,000 hours of your life doing very hard work, which is not very fun and frequently very frustrating," he said, "and you get 100,000 people to play your game for 100 hours, you've created 10 million hours of entertainment or 10 million hours of joy, as I like to put it, for a thousand hours of sweat. That's an incredible rate of return." In the end, if you have to ask the question "Why make games?" or "Why work in the game industry?" you should choose another career.

But just having the passion to make games is not enough. To put it bluntly, the human resources departments at game companies are filled with stacks of resumes from passionate gamers who will never be considered for product manager, producer, or programmer positions. Why? Because those jobs get filled by current employees' friends. Like the rest of the entertainment industry, when it comes to getting a job in the game industry, who you know is almost as important as what you know. And that's the way it should be. When a new team forms or an opening appears, it's no surprise that a company wants to hire people they know they can count on, as opposed to inexperienced people who may not be able to pull their weight.

If it seems as if we're painting a bleak picture, we are. The game industry is possibly only second to Hollywood in the number of "coulda-beens" and "shoulda-beens" it generates. It's tough to break in, but it can be done. And don't worry — this isn't a hopeless catch-22. There are a number of entry-level jobs that will enable you to get a start so you can meet the people who can help you advance later. None of these jobs are exactly glamorous, but they're a start.

Luckily, the game industry is largely a meritocracy, and while there is always some politics to deal with, if you're good, you generally move up the ladder, sometimes quite quickly. Over the next 10 pages, we describe some of the best entry-level jobs available in the



Testing

The most thankless of all the entry-level jobs, a game tester works long hours for very little glory. And in the end, when the job is done to perfection, there is absolutely no trace of a good tester's work, except a mention in the manual, because the tester's job is to clean a game of all imperfections. It's a life generally marked by blurry vision, junk food, and long hours broken up only by forced group breaks and catnaps on the office cot.

But securing a job as a game tester is also one of the easiest ways to get into the game industry. And there is a very real possibility of moving from "test" (as it's usually called) to an assistant producer's role. There are other benefits to working as a tester. Despite their lowly status, testers are absolutely key to a game's development. Programmers will hate you, (especially if you can find crash bugs on Friday afternoons), but testing is vital, and there is pride in a job well done. Also, the test department is an excellent place to learn exactly what goes into creating a game and a place to prove your commitment to the company. Finally, just getting in the door is going to give you the opportunity to meet the people you need to know for a bigger and better career in games.

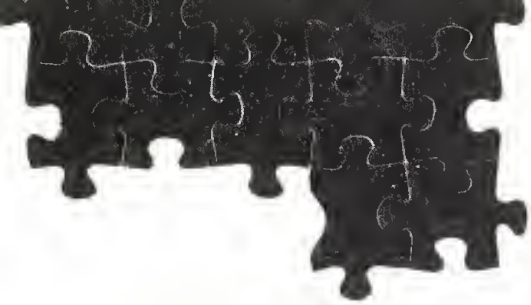
Entry-level position: Game Tester

Starting salary: $8 - $10 / hour

Core responsibilities: Playing games, finding bugs, writing bug reports.

The best part of the job: Playing an integral role in the release of a game can be fulfilling. According to Mark Pentek, quality assurance manager at SCEA, "It's a lot of hard work, but it's nice to see the progression from a game that doesn't work to one that does." This is also the only job in the game industry where you actually are paid to play games all day.

The worst part of the job: Imagine playing the same game all day for six months. Your attitude



industry. All of them offer some kind of advancement path.

Ultimately, the best advice we can give is to get started now. Want to be a programmer? Buy books and start learning how to program. Want to be an artist? Start drawing. The more experience you have, the better. It doesn't matter if all you're making is a *Pong* clone, you're learning. Get active on newsgroups, release shareware, hook up with like-minded people, and try to get a project off the ground. Who knows? You may get noticed, or you may meet people who can help you later. Or maybe your independent game company will be the next Id. You won't know unless you try.

There are also any number of schools that offer courses specifically targeted to people interested in a career in the game industry. Some of them advertise in the back of this magazine. (We'll be doing a separate feature on schools' game programs in a forthcoming issue.) Most of these schools have excellent placement departments, and recruiters from game companies routinely use them as sources for educated, experienced, and most importantly, cheap talent.

Here's some other general advice that will help. First, be prepared to move. The game industry is centered in California, but there are a few other significant development areas like Texas (Austin and Dallas) and Seattle. Can you make games anywhere? Sure, but if you want to maximize your chances of getting a job in the field, go where the companies are. Second, invest the time and money in a resume creation book. It may seem stupid, but it makes a difference — if your resume isn't excellent, you lose, every time. Third, one of the best ways to meet people who can help you out is on the Net. Never be afraid to email anyone to ask for advice or to see if there are openings available. But don't be a pest — if you don't get a response, don't push it. That same advice goes for HR departments too. Calling endlessly to ask if anyone has looked at your resume is a good way to ensure the answer will be "no."

Also, note that there is no category on the following pages for "game designer." If you just want to design games and let others create them, we suggest that you rethink your plans. First, for legal reasons, no company will accept unsolicited game ideas. Second, "game designer" is not an entry-level position. Any of the jobs included here can eventually lead to a position where you have input on a game's design, which can lead to a position where you get to make the design document. But it isn't going to happen overnight.

If you're committed to making your game now, and you don't want to deal with the years of dues-paying it may take to get to that position at an established company, go online and organize a team. We know of several small, independent developers all over the country who have done just that, successfully. Even if it doesn't work out, you'll gain valuable experience that can be used to help get a job elsewhere.

Oh, and one other thing. We lied a little in the first paragraph. There is a lot of back-breaking labor, but working at a game company is usually pretty fun. Because for the most part, you are working on a creative endeavor with other intelligent people who share your love for games — and that's more than we can say for most jobs.

So good luck (and don't forget us when you're famous).

will quickly go from "I can't believe they are paying me to do this" to "They can't pay me enough to do this." Plus, by the time a game reaches the final testing stage, it is just a few steps away from hitting the shelves. This means long and often late hours (sometimes not even starting until the middle of the night if that's when a new revision comes in) testing the game for any last second problems. Pentek explains, "It's not a nine to five job. You have to be ready to sacrifice."

Best way to get started: Since getting into the test department does not require specific education or work experience, your best bet is to study the industry itself. Contact companies whose games you like for possible openings. This is one of the few jobs that's relatively easy to get "cold." Most companies hire lots of testers before Christmas and keep the best ones on full time after the holiday crunch time is over.

Best education background: A high school diploma (and sometimes not even that) is all that's required for most testing positions.

Necessary experience: Securing a position in the test department does not require any specific work experience. This is one of the few places where the line, "I play a lot of games" should be on your resume. You will need to prove that you have a great deal of enthusiasm and good communication skills for relaying information about the games to the development team.

What you'll gain from the job: In addition to the valuable experience you'll get working on a team, working in test means being involved in the development process of a game. Smart testers will learn important aspects of what it takes to create a game. Sharp testers will also use their position to meet people in the company from whom they could learn other skills.



Working in the test department is not the dream job many would think, but it can lead to a more desirable industry position

Where it's going to take you: The best move from test is to assistant producer. Try not to take a detour to customer support — that's usually a dead end. It would be a mistake to assume that getting a job in test is a guaranteed pathway to a producer's position because only testers with the right kind of enthusiasm and an outstanding work record will ever see that kind of advancement. "There is progression, but it's slow," says Pentek. "You make relationships and from there, maybe the associate producer you worked with becomes a producer, and he remembers all the hard work you did as a lead tester." A job in test can also lead to other departments including audio, programming, or art. The key is to keep an open mind and do what you can to learn about everything until you find the next logical step in your career.

The one thing you may not have known: Working as a tester may require you to play games all day and night, but that doesn't necessarily mean that you're going to enjoy it. Testing a game and playing for fun are two very different things. In test, you may be required to play your least favorite kind of game for three months straight, only to be followed by the worst game you've ever laid your hands on. According to Pentek, "The one key word for this department should be sacrifice."

Best way to prepare for a career in game testing: Unless you want to go into QA management (which can be a high-paying position at any high-tech company), testing probably won't be your career, but ideally, you'd get to play a lot of games in different genres. Also, spend some time working on your writing because a good tester has to be able to write effective bug reports. Finally, give some thought to your future career in the industry. If you're serious about getting into the game industry, this may be your chance, and you're going to want to get the most out of it.

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Marketing

Not every career in games involves the actual creation of games. Marketing support is an essential aspect of the game industry and a great way to get a job with a game company. Some people look at the marketing department as the enemy, but without marketing, games don't sell, and a marketer who knows games has a huge advantage in the industry. Entry-level positions are usually support-oriented, but soon marketing coordinators (the polite way of saying "marketing assistant") may find themselves playing an integral role in promoting the good name of a company or product. Much like the job of a tester, securing an entry-level job in the marketing department may not require any special schooling or specific work experience. Your success will depend on your communication skills, cleverness, and commitment to promoting the product. An entry-level job in marketing may also lead to a job as a product manager, which is a far more demanding position,







Marketing is a mixed bag of responsibilities. From coordinating promotional campaigns to communicating with the press, a marketing coordinator gets a crash course in the business of videogames

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since product managers control the entire marketing campaign of a game, from documentation and box design to advertising campaigns and strategies. Some product managers also have significant input on the design side of new projects before they begin. If communications and influencing people are your specialties, the marketing department may be where you'll want to focus your efforts.

Entry-level position: Marketing Coordinator

Starting salary: $18,000 - $24,000

Core responsibilities: Sending mailings, trafficking materials, acting as a liaison between publisher and developers, keeping marketing projects on schedule, distributing materials to the press, following up with designers, retailers, and press.

The best part of the job: Working on key aspects of the business like package design and creative promotional items can be exciting. Plus, it's satisfying to see your work on TV or in magazines.

The worst part of the job: This is a detail-oriented position and requires some thankless office tasks, like making copies and stuffing envelopes.

Best way to get started: The key to marketing is communication, so proving that you can communicate well with someone already working for a game company is a great way to show that you're the person for the job. Work on making your cover letter shine, and don't forget to dress up for the interview.

Best education background: A degree in marketing, communications, English, or any other of the liberal arts is helpful.

Necessary experience: There are no absolute must-haves when it comes to prerequisite experience in marketing. What most employers look for is proof that you can communicate well and be creative and influential. This is an excellent post-graduate position.

What you'll gain from the job: Organization, communication skills, and (hopefully) an improved ability to influence the opinion of the masses. A career in marketing also provides an outlet for creative experimentation in art and design. Finally, since marketers deal with every facet of a product, from development to publishing to advertising to retail, it can be a crash course in becoming business-savvy.

Where it's going to take you: There are no hard-and-fast rules about where a marketing coordinator job will take you. According to Kelly Zavislak, product manager at Eidos, "A lot of it is just taking the initiative to find areas where you can do something different." Having started out as a marketing coordinator, Zavislak took the time to explore opportunities on the Eidos web site and soon found herself promoted to the position she holds today — a position that could easily be carried over into other industries.

The one thing you may not have known: Marketing is as much about business as it is about creative campaigns and influencing opinions. The marketing department effectively ties together everything from development to sales, and a good marketing representative must develop effective business skills to stay competitive.

Best way to prepare for a career in marketing: When asked what advice she would give to someone trying to get a job in the marketing department of a game company, Zavislak replied, "If there's any way you can get to know someone in the industry ..."





Art

Artists are responsible, of course, for the look of a game — from character design to scenery to vehicles to everything else. A good art team can make or break a product. As with any entry-level job, though, the idea is to get your foot in the door of an art department at a game company known for doing good work. It's important to remember that your first job may not be so glamorous. As an art tech, for example, you may spend hours processing someone else's artwork or cleaning pixels in someone else's texture maps.

But the job is not without its perks. For one, the art department is always going to get the most powerful computers — much better than what most people can afford on their own or what they're using in customer service. So even if you're spending all your time cleaning pixels in one of a hundred different rock textures, at least you're getting experience on a powerful graphic workstation and learning about all the latest software. And with this kind of hardware access, an aspiring artist can usually find time "after hours" to experiment with other programs of interest. And just getting started in the art department also affords you the opportunity to demonstrate your talents to the people who can push your career forward.

Entry-level position: Art Tech, Staff Artist

Starting salary: $25,000 - $30,000

Core responsibilities: Compressing artwork, cleaning images, doing preliminary artwork, low-level 3D modeling.

The best part of the job: A big perk is getting to work with all of the best hardware and software while exploring one of the most creative aspects of the game industry. According to Paul Zinnes, an artist at LucasArts, "You have to keep learning because one day you'll be working on low-level poly models and the next you'll need to do some particle work. This isn't something you'd get to do at an effects house."

The worst part of the job: Dealing with technological limits and reducing your artwork to work on the lowest common denominator of consumer technology gets frustrating.

Best way to get started: Despite the fact that all of today's game graphics are done on high-end computer workstations, the best way to prepare for a career in the art department of a game company is through traditional art and animation training. It's much easier for a game company to teach a good artist a new software package than it is for it to teach someone how to be a good artist. According to Chris Miles, artist/animator at Lucas, "You don't have to be a programmer to figure out how to use art tools." It's also important to remember that unlike most disciplines in the game industry, getting started in the art department is more about what you know than who you know, and artistic talent, demonstrated through a good portfolio, is your best ticket in.

Best education background: A degree in fine arts is helpful, as is knowledge of 3D modeling or animation programs.

Necessary experience: To get in, you'll need a strong portfolio before anyone will even talk to you. Your work doesn't necessarily have to be professional, but it has to show promise. Says Lucas' Mai Nguyen, "Don't send in the tutorial from a 3D modeling program." What most game companies are looking for are good all-around skills and a clear understanding of traditional art elements. Remember, unlike computer programming or game testing, "art" is not a new discipline and the traditions run deep.

What you'll gain from the job: Expect to get plenty of experience in several new software packages. From 2D to 3D, character design to animation, a seasoned art professional at a game company will have explored it all. According to Nguyen, "The videogame industry is really flexible, and that's something you don't get in feature films, which is much more specialized."

Where it's going to take you: "Like a lot of people, I was intending to go on to a special effects house," says Zinnes of his college days. "Because





Videogame art requires a mix of traditional and technical skills. But first you need classic training in the arts

professors don't know too much about games, they don't talk much about them, and so I had no idea what was involved in videogames. If I had known, I would have made more of an effort to get into them because of the flexibility." It's this kind of ignorance about games that keeps talented artists in such high demand. As a result, there are a number of opportunities within the game industry for someone willing to put in the time and learn the ropes. Because game art is so dependent on a variety of specialties and none is more important than the other, there is no clear career path. The ultimate goal for most artists is lead artist of a big project or department, but many are happy focusing on more specific disciplines, like animation or 3D modeling.

The one thing you may not have known: There is a common misconception that knowing the technology is just as important as being a good artist, or even worse, that knowing the software will make you a good artist. Becoming a good artist has little or nothing to do with knowing the latest 3D modeling package.

Best way to prepare for a career in the art department: Though a fine arts degree is probably the most obvious choice in preparing for a job in the art department of a videogame company, it's not the only choice. "I took the scenic route to get here," says Zinnes. "I have an undergraduate degree in chemistry. Then I got a graduate degree in industrial design." Preparing for a career in game art means understanding what it takes to make great art, so study disciplines like drawing, animation, and design. Also, learning new software is never a bad thing, but as Zinnes warns, "Don't get married to your software." Adds Miles, "I've learned seven programs since I started here, many of which have become obsolete, and that's in just two years." The best advice is to keep current and also to keep an open mind.





Programming

Unlike the comparative ease of getting a position in the test or marketing department, even an entry-level position as a programmer is going to require some documented experience. That doesn't mean that you have to be an expert programmer to get started. It only means (in most cases) that you will have to have a strong knowledge of contemporary programming languages like C and assembly and be able to offer proof of experience in the form of some kind of demo or shareware title. They don't necessarily have to be great, but employers will want to see something that shows initiative.

And then from there your biggest asset will be your willingness to learn. Good programming is what pushes the technological envelope of game making, and a company will want to feel secure that the person it's hiring is forward-thinking enough to keep learning and pushing that envelope.

Fortunately, there are a number of options for learning programming skills, from traditional university courses to teaching yourself from books. But be forewarned: This is one position for which you will really have to take the initiative before getting started.

Entry-level position: Assistant Programmer

Starting salary: $35,000 - $40,000

Core responsibilities: Low-level programming.

The best part of the job: You get to work with experienced programmers and play a vital part in the actual creation of a game. "When I was in school I thought I'd get into movies," says Bill Willis, senior programmer at SCEA, "but I don't want to do that anymore because with videogames, it's such a small team that you get to live and die by your own talents."

The worst part of the job: There's some grunt work, namely doing the work that senior programmers would rather not do. Some of the job can be tedious, and rest assured that the new guy is likely to find the most tedious jobs landing squarely on his or her plate.

Best way to get started: Take programming classes, start studying on your own, and start programming. Learning the skills it takes to be a good programmer takes time and practice, both of which you'll get plenty of once you're working as a programmer — but you'll need to make the first move on your own before you ever get that opportunity. According to Nathan Hunley, associate programmer at SCEA, "Developing skills takes time, but it definitely pays off in the end." Once you've got the skills it's time to contact some of the companies for which you'd like to work. Unlike some aspects of the game industry, getting that first job as a programmer has very little to nothing to do with who you know, for without the necessary skills, it just doesn't matter what kind of connections you have.





A job in the programming department may not demand formal education, but it does require some technical knowledge and past experience

What you'll gain from the job: You'll improve your programming skills and get access to expensive development kits and tools that only industry professionals use. Some programmers may also be among the first to program games for a brand new and potentially important piece of hardware.

Best education background: A degree in computer science or math is virtually a must. Dedicated videogame schools like Digipen (www.digipen.com) in Vancouver, Canada, are also good. "Digipen gave me the skills I needed," says Hunley, a recent graduate of the highly focused two-year program. "They took me from scratch all the way up to the point where I could be employed."

Where it's going to take you: A job in programming can lead anywhere within the industry, but most often, because of the specialized knowledge required, starting out as a programmer means finishing your career as a programmer. Many, however, tend to move around in the industry from project to project and company to company. According to Troy Gillette, a senior programmer at SCEA, "We're always looking for an opportunity to get together with people that we know are really good." It is also possible, and not unheard of, to move on to game design, art, or producing because nearly every aspect of game development is aided by a background in programming.

Necessary experience: Like many jobs in the game industry, securing a position as a programmer may not require a specific kind of background, but it does demand a documented knowledge of certain programming skills. "Today, 3D skills and a math background are obviously standard. There aren't a lot of jobs floating around that don't require these things," says Willis.

The one thing you may not have known: What most people don't understand about programming games is that long hours and much creativity are channeled into even the simplest of game coding. Good programming is constantly pushing the hardware and experimenting with more efficient ways of doing things. This can often mean late nights or even weeks of work that ultimately lead nowhere. Good programmers know how to balance experimentation with a good sense of their limitations. Says Willis, "You don't want someone who is a total hack, and you don't want someone who is total discipline either. You want someone who is willing to break rules to get the job done."

Best way to prepare for a career in programming: Perhaps more than any other aspect of the industry, preparing for a career as a coder means practicing on your own. "I taught myself everything — all the languages, assembly, systems, everything," says Gillette. There are schools that can teach you much of what you need to know, but in the end, it all comes down to the work you do on your own.



Music/Sound

With the dawn of the 32-bit era, music and sound effects for games became strapped with a new and powerful sense of urgency. No longer limited to the MIDI sounds of the 16-bit era, today's games are backed by sweeping orchestral scores, contemporary pop/rock music, and more recently, futuristic techno sounds.

At the same time, sound effects in games have been raised to the level of the Hollywood feature film and require an almost scientific approach to be acceptable. Thus, the need for talented sound engineers and musicians has grown dramatically over the past few years and now represents one of the most exciting areas in which to break into the game industry. Much like getting into the industry via the art department, some kind of experience and understanding of today's high-tech sound equipment is an absolute must. This may not require any professional experience or schooling, but it will take a documented passion and knowledge of the industry just to get started.

Entry-level position: Staff Audio

Starting salary: $25,000 - $30,000

Core responsibilities: Sound effects, composing, audio programming.

The best part of the job: People in the music department get the opportunity to work on every aspect of the game's sound from effects to interactive tracks to cut scene scores. "The best part is that you get to do what is probably also your hobby," says David Whittaker, audio director at EA.

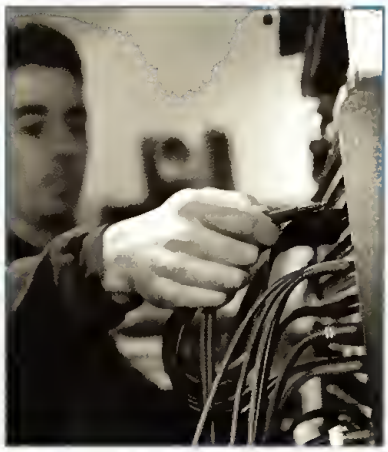
The worst part of the job: At the same time, you must deal with the limited resources of today's game technology. Graphics take up the lion's share of available resources, and sound and music often only have limited RAM to work with. Says EA's Don Veca, "It's one thing to be a composer, but when you're doing something for a game, you have to really know the limitations of the system. It's like trying to compose music with both hands tied behind your back."

Best way to get started: The only way to get started in game audio is to just start doing it. It may be easier to get your foot in the door of a smaller company, but also remember that working for a small company means your knowledge will have to be even broader to fill the gaps. If you know this is the career path for you, buy a MIDI sequencer and a sampler for sound effects, and start experimenting.

What you'll gain from the job: If you do the job right, you'll become an expert in all things audio, from the technical aspects to up-to-the-second trends in music.

Best education background: "Don't go to college," suggests Murry Allen, EA's director of post-production. "Get a job."

Necessary experience: Jumping into the audio department of a successful videogame company is going to take some kind of documented experience. This might mean having done sound for a small game company, TV station, or a shareware game, or it could even mean studio work. In a field as technically oriented as game audio, few companies are going to give you the kind of responsibilities you crave without proof that you're up to the task, and that takes initiative on your part to get the experience. It's possible to move into the audio department from some other part of the game industry like the test department if you can prove that you have the technical and musical chops for the job. Make demo tapes, make soundtracks for fictional games, whatever. Just start creating, now.





Getting into the sound department requires some experience and a lot of initiative. There's not much available at the entry level, so learn everything you can about audio

Where it's going to take you: "This is it," says EA's Mike Farly. "I'm doing what I want to be doing." Unlike other jobs in the videogame industry, arriving in the audio department of a successful game company often means arriving at your pinnacle work destination. You'll learn skills that are easily applied to industries, like film or commercials, but none offer the same kind of challenge as doing audio for games.

The one thing you may not have known: By wasting resources with careless execution, the music can actually hinder the overall game performance. "We want to make the audio the best that it can be, but not at the expense of making the game suffer," says Veca.

Best way to prepare for a career in game sound: According to Rob Hubbard, audio technical director at EA, "One of the problems is that it's really hard to take someone in at the entry level because the situation here is such that every six to 12 months, we're going off in a whole different direction because of what the technology is doing. So someone at entry level is going to be too far behind what we're doing." Adds Farly, "The most valuable knowledge [in trying to break into game audio] is [music] programming ability." Once you've got a basic understanding of audio programming and composing, it's time to seek out some applicable work experience anywhere you can find it, even if that means giving away your services for a while.



Producing

Although the day-to-day duties differ from company to company, essentially the producer's role in the game business is to manage all the different elements of a development project. That can can mean a variety of things, from design work to team management. Although assistant level producers don't have the same kind of control over a product that actual producers do, they may well find themselves traveling to the developer's office for spot checks or being asked to offer advice on gameplay and other important issues.

This is a role in which it should be easy to prove your merit as a full-fledged producer and if done well is typically a brief stop on the career path to senior producer. Getting into a game company as an assistant producer is not going to be as easy as other entry-level jobs and will probably require some kind of documented experience — although it doesn't necessarily have to be professional. Once the position is secured, an assistant producer will be expected to play an important role from the very start. Unlike other positions at a game company, which require as much specialization as possible, producers need to be generalists, although preferably gifted generalists, who are as comfortable talking about code to programmers as they are talking to marketers about ad campaigns.

Entry level position: Assistant Producer

Starting salary: $30,000 - $35,000

Core responsibilities: Coordinating schedules, burning game revisions, making progress reports, pursuing team hardware needs, testing game revisions, getting food for team when working late.

The best part of the job: Producers play a part in almost every aspect of a game's development. Full producer plays an integral role in design, team management, marketing, and even sales.

The worst part of the job: At entry level, the producer's job is mostly grunt work. Even as an associate or full producer, the job often requires "putting out fires," whether they be personnel squabbles, last-second changes, or unreasonable PR requests.

Best way to get started: Unlike the marketing or test department, you're not likely to secure a position, even as an assistant producer, with sheer enthusiasm. Companies are looking for producers with potential in at least one of three disciplines, says Stephen Hutchins, a producer at Sega: people skills, organization skills, and technology. "Just being a hardcore gamer isn't enough. Your resume is still going to end up in a pile maybe a foot high with people who have the same kind of interests. What you need to do is communicate certain types of skills. What a producer is doing when he hires an assistant is looking for someone that he can trust." And so trustworthiness is, above all, what you're going to need to prove to get your foot in the door.





Producers get a sampling of multiple tasks, playing a role in almost every aspect of game development. But this can mean a lot of grunt work too

Best education background: A degree in computer science, business, or some other kind of management discipline is applicable.

Necessary experience: A technical background is a big advantage for potential producers, as it will help open the communication channels between producers and their development team. Management experience is also a plus, as product and team management is an essential part of the job. At the entry level, if you've had any game industry experience, you're going to have a huge advantage over other candidates as well.

What you'll gain from the job: There is no other job in the game industry in which you will encounter so many different aspects of the business. Don't even bother getting involved as a producer if you're not interested in the big picture. But if you are, this is the place to learn what drives the industry.

Where it's going to take you: A career as a producer can lead almost anywhere in the game industry. Want to be a "designer"? Start here. After running the gamut of producer's roles, from assistant to senior, there are a number of opportunities to consider. Since a good producer will seek out experience in every aspect of the business, a person with years of experience in this role could conceivably fit in anywhere in the company, including high-level executive positions.

The one thing you may not have known: Everyone knows about the long hours. "One Christmas season I worked for 57 days straight," says Hutchins. What most people don't know about are little things that tend to fall between the cracks and into the producer's lap. Simply put, if it doesn't fit into anyone else's job description, it goes to the producer. This can include something as inane as burning copies of your game to searching out the perfect sound effect to finding a new keyboard for a prima donna programmer.

Best way to prepare for a career in producing: Hutchins offers some important advice for all would-be producers: "If you're not in constant motion and keeping up with the industry, you're going to be swept back, and it may sweep you back so fast you'll end up out of the industry." The best way to prepare for a job as a producer is to prepare for everything. Gain any experience you can in the three key disciplines — people skills, organization, and technology — and be open to getting in any way you can. The industry looks to its producers to know at least something about everything, so the more you know, the better prepared you will be.

Your own contact list

One of the most difficult aspects of approaching a company about possible job openings is knowing who to contact. The following list gives you some contact names that should help you get started. Note that we didn't print phone numbers or email addresses. It's best to just send a resume that includes your phone number and email address with a self-addressed stamped envelope so recruiters can contact you if they're interested. Recruitment firms are in yellow.

3DO Company
Jennifer Hubbard
600 Galveston Drive
Redwood City, CA 94063

Access Software
David Curtin
Director of Human Resources
4750 Wiley Post Way
Bldg 1, Suite 200
Salt Lake City, UT 84116

Acclaim Entertainment
Debbie Parker
One Acclaim Plaza
Glen Cove, NY 11542-2708

Accolade
Laurie Gamelsky
Staffing Specialist
5300 Stevens Creek Blvd.
San Jose, CA 95129

ActionWorld
Susan K. Alexander
251 Park Avenue
12th Floor
New York, NY 10010

Activision
Paige Morris
11601 Wilshire Blvd
10th Floor
Los Angeles, CA 90025

Advanced Productions Inc.
Jonathan Hanna
1230 Hempstead Turnpike
Franklin Square, NY 11010

Alias Wavefront
Mary Ruffolo
110 Richmond Street East
Toronto, ON M5C1P1
CANADA

ATI Technologies
Trish Hombeck
1 Mount Royal Avenue
Marlborough, MA
01752-1978

Autodesk, Inc.
Kevin Blaker
Multimedia Division
111 McInnis Parkway
San Rafael, CA 94903

Berkeley Systems
Cameron Barnhart
Human Resources
2095 Rose Street
Berkeley, CA 94709

Bernard-Hodes Advertising
Wendy Duke
2100 Geng Road
Palo Alto, CA 94303

Bethesda Softworks
Lori Rahr
1370 Piccard Drive
Rockville, MD 20850

Bleck Ops Entertainment, Inc.
Rita Mines
2121 Cloverfield Blvd
Suite 204
Santa Monica, CA 90404

Boss Game Studios
Kim Little
8383 158th Avenue, N.E.
Suite 100
Redmond, WA 98052

Broderbund
Jennifer Rangassi
Employment Representative
500 Redwood Boulevard
P.O. Box 6121)
Novato, CA 94948

Capcom
Heather Tarpy
Human Resources
475 Oakmead Parkway
Sunnyvale, CA 94086

Codemasters
Rachel England-Brassy
Lower Farm House
Stineythorpe SOTHAM
WARWICKSHIRE CV330OL

Corel Corporation
Sandra Gibson
Manager, Human Resources
1600 Carling Ave
Ottawa, ON K1Z 8R7
CANADA

Creative Multimedia
Charles Kawasaki
Executive V.P., product development
225 S.W. Broadway
Suite 600
Portland, OR 97205

Crystal Dynamics
Michael Nichols
64 Willow Place
Menlo Park, CA 94025

Cyberlore
Lester Humphreys
19 R Hawley Street
Northampton, MA 01060

CyberSites
Laurent Ohana
Business Development Mgr.
19 West 21st Street
Suite 902
New York, NY 10010

Cyclone Studios
Flower Iqbal
2600 South El Camino Real
3rd Floor
San Mateo, CA 94403

Daglow Consulting Group
Marta G. Daglow
Human Resources
Consultant
23 Ross Common
Ross, CA 94957

Davidson & Associates/Blizzard Ent.
Jennifer Kang
19840 Pioneer Avenue
Torrance, CA 90503

DreamWorks
Robin Hart
100 Universal Plaza
Lakeside Building #601
Universal City, CA 91608

Eidos Interactive
Collin Boswell
651 Brannan Street
San Francisco, CA 94107

Electronic Arts
Suzanne Garcia
1450 Fashion Island Blvd
San Mateo, CA 94404

Electronic Arts Seattle
Shannon Manley
Human Resources
1065 12th Avenue N.W.
Suite E4
Issaquah, WA 98207

Electronic Arts Canada
Kathleen DeLuge
4400 Dominion Street
Burnaby, BC V5G 4G3
CANADA

Electronics Boutique
Jodi Ortiz
931 Matlack Street
Westchester, PA 19381

FASA Interactive
Thomas Dowd
Senior Game Developer
676 North St. Clair, Suite 1050
Chicago, IL 60611

Gemsoft Corp.
Colleen Mogan
Marketing Director
12 Sheppard Street
Suite 500
Toronto, ON M5H 3A1
CANADA

Gravity, Inc.
Cathy Borg
625 Second Street
Suite 405
San Francisco, CA 94107

High Voltage Software
Kerry Ganofsky
2340 S. Arlington Heights Road
Suite 200
Arlington Heights, IL 60005

Humongous Entertainment
Patricia Lonergan
13110 N.E. 177th Place, #180
Woodinville, WA 98072

I*Motion
Alan Lankin
1632 Fifth Street
Suite 220
Santa Monica, CA 90401

Iguana Entertainment
Valerie Lozada
Barton Oaks Plaza One
Suite 300
901 MoPac Expressway South
Austin, TX 78746

Interactive Magic
Nina Rutledge
215 South Port Dr
Suite 1000
Morrisville, NC 27560

Intermetrics
Paula Gillis
Northwest Park,
23 Fourth Ave
Burlington, MA 01803

Interplay
Anisa Aven-Allen
Research & Development
16815 Von Karman Avenue
Irvine, CA 92606

Kesmai Corporation
Martha Cooper
Human Resources
230 Court Square
Charlottesville, VA 22902

Kinesoft Development
Michele Budka
1090 Johnson Drive
Buffalo Grove, IL 60089

Kirin Entertainment
Andrew Webster
47842 Warm Springs Blvd
Fremont, CA 94539

Konami Inc.
Dennis Murray
900 Deerfield Parkway
Buffalo Grove, IL 60089-4510

Kronos
Dana Tjang
150 South Arroyo Parkway
Pasadena, CA 91105

Legend Entertainment
Jim Tyler
Technical Manager
14200 Park Meadow Drive
Chantilly, VA 22021

LucasArts
Lisa Goldman
3140 Kearner Blvd.
PO 10307
San Rafael, CA 94901

Mattel Media
Sandy Yonemoto
333 Continental Blvd.
M1-0303
El Segundo, CA 90245

MicroProse
Mary Pat Fitzgerald
Staffing Manager
180 Lakefront Drive
Hunt Valley, MD 21030-2245

Microsoft Corporation
Melissa Grey
1 Microsoft Way
Redmond, WA 98052

Mindscape
Alan Cooper
Technical Staffing
88 Roland Way
Novato, CA 94949

Monarch Avalon, Inc.
Jack Dott
President
4517 Harford
Baltimore, MD 21214

Motion Software
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535 W. Lambert Dr
Building E
Brea, CA 92830

Namco
Joan Stark
150 Charcot Avenue
Suite A
San Jose, CA 95131

Neversoft Entertainment
Joel Jewett
23147 Ventura Blvd
2nd Floor
Woodland Hills, CA 91364

New World Computing
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Product Development
29800 Agora Road
Suite 200
Agora Hills, CA 91301

Ocean
Kathy Partida
General Accounting Manager
1870 Little Orchard Street
San Jose, CA 95125

Papyrus
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Human Resources
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Watertown, MA 02172

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Odd World Inhabitants
Jim Fajardo
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San Luis Obispo, CA 93401

Redical Entertainment
Jill Keith
185 Berry St.
San Francisco, CA 94107

Realtime Associates
Heather Thompson
2250 E. Imperial Ave.
Suite 620
El Segundo, CA 90245

Red Storm Entertainment
Paul Wirth
Producer
2000 Aerial Center
Suite 110
Morrisville, NC 27560

SegaSoft
Sue Nolle
Staffing Consultant
303 Twin Dolphin Drive
Suite 200
Redwood City, CA 94065

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TMP Worldwide
Derek Hals
Account Executive
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VR Baseball 99 has detailed baseball animations including motions for collision. When a runner breaks up a double play and slides into second base, you can see the shortstop get knocked on his butt. **Andruw Jones** will dive to catch hard line drives, and baserunners round the bases instead of making perpendicular cuts. We've also quickened the pace of baseball by adding a variety of quick key short cuts to speed up gameplay, and by adding an innovative menuless pitching interface that let's you pitch to a nearly infinite number of locations instantly. Which means you're now able to throw a **Greg Maddux** fastball without tipping your hand to your opponent.

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are impressive. NEC claims PVNG technology should offer better than five times the performance of the PCX2 chip currently deployed. Improvements include full floating-point setup on the chip, which will decrease the dependence of the chip on CPU speed for performance. Also, hardware tiling acceleration is on the chip. The technology has full support for 2X + Sideband AGP and 66MHz PCI for the 2D/3D solution. Microtiles, key to the plane-based architecture of PowerVR, now have variable sizes, and the graphics pipeline has been widened. Texture shading has been boosted, and, addressing a complaint about the first generation of PowerVR technology, support is now in place for all OpenGL and Direct3D blending effects (see sidebar). Multiple fog modes have been implemented, as have some advanced special features, including bump mapping, anisotropic filtering, and special-effect volumes (shadows, etc.). The technology also now supports texture compression and triangle strips, both key features of DirectX 6 and 7, as well as the forthcoming DirectX 8/Farenheit API. A number of other graphic effects, which should improve image quality, have been implemented, including true perspective correct ARGB Gouraud shading and image super-sampling for full scene anti-aliasing.

PowerVR says that the chip will have sustained rendering rates of one million front-facing, fully textured, lighted, and shadowed polygons per second, with up to three million polygons per second at peak performance rates. Fill rate is roughly 70Mpixels per second, although this number is deceptive because PowerVR uses hidden surface removal technology instead of the standard 3D rendering methods. The effective, observed fill rate is roughly 120Mpixels per second. That puts the $99 PowerVR well within the power range of the Lockheed Martin-developed Sega Model 3, which runs about $6,000.

Unlike conventional 3D acceleration — that used by 3Dfx, Riva, and other chip manufacturers — PowerVR uses plane-based rendering. That is, instead of rendering each object entirely, including things that will be occluded in the final image, PowerVR merely renders the pixels that will be seen in the final image. To avoid rendering objects that will not be seen, which wastes time and slows frame rates, conventional 3D accelerators need a z-buffer to keep track of the depth of objects in the scene. PowerVR does 32-bit accurate floating point z-buffering on-the-fly, without additional, dedicated RAM, which conventional z-buffers require; this enables PowerVR to keep costs down. The technology also uses system RAM for textures. "3Dfx offers high performance, but at too high a price — they will not capture a major share of the 3D performance market," says Bellfield. "Our one-chip solution will beat Voodoo^2, which is this

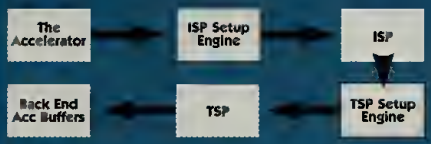
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"3Dfx offers high performance, but at too high a price"

Charles Bellfield, NEC

Performance

PowerVR's next generation technology essentially takes the original PowerVR architecture and adds intelligent processing, eliminating unnecessary mathematics for a more streamlined rendering pipeline. This alone sets it apart from the competition.



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- **Back-end accumulation buffers allow image composition and blending on a microtile basis**
- **Polygon data is read once for each microtile; each resultant pixel is written to the frame buffer once**

BLOW THEIR MINDS

Image courtesy of Psygnosis

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continued from page 55

huge board packed with silicon."

Since NEC, which will manufacture the chips, owns its own fabrication plants, it can also get chips to market more cheaply than 3Dfx, which must farm out chip production. "3Dfx is a great company, with great developer support, but they're just too small," says Epic Megagames' Mark Rein. "What 3Dfx needs is a big, fat, sugar daddy with a fab. NEC is 100% vertically integrated. PowerVR 2, or whatever they're actually calling it, is going to be at least as powerful as Voodoo^2, for half the price." 3Dfx's assertion, of course, is that gamers will pay more for the best technology, a sentiment **Next Generation** tends to agree with. However, if PowerVR can deliver top-level performance for half the price, 3Dfx may have its work cut out for it in 1998.

Although VideoLogic's technology enables cheaper hardware, it comes at a price: Plane-based rendering is much more difficult to program for than traditional, vertex-based rendering. Combined with the power of the original Voodoo, this gave 3Dfx and its Glide API a massive lead in mindshare in the first generation of practical 3D game accelerators, a fact that has not gone unnoticed at NEC. "In the past," admits Bellfield, "PowerVR and its plane-based architecture was a visible technology. It gave great results, but it was really difficult PowerVR's next generation is totally invisible; developers won't even know they're working in a plane-based environment."

Why not? Because they'll be using Microsoft's Direct3D. Although PowerVR will still support and update its SGL API, Bellfield says that "everything that PowerVR does will be supported in future versions of DirectX — texture compression, polygon strips, everything. We have an office in Redmond and we work extremely closely with Microsoft." Bellfield goes on to note that polygon strips are a key feature of Talisman — a hardware and software specification proposed by Microsoft that has been subsequently rolled into the DirectX program. "Anyone who thinks Talisman is dead is so amazingly naive it's unbelievable," insists Bellfield.

> **"What 3Dfx needs is a big, fat, sugar daddy with a fab"**
>
> **Mark Rein**, Epic Megagames

"With DirectX 6," he says, "everything we do will be supported by D3D. I'm not going to be like our competitors and dictate 'Thou shalt use our API.' Use anything! If you only support one API, it divides the industry — we'll deliver the product developers are asking for." Considering the difficulty of programming SGL, it's perhaps no wonder that developers are asking PowerVR and Microsoft to do the work of getting games to run optimally on PowerVR hardware. Still, Bellfield admits that there is a performance gap between games written for D3D and SGL, although he claims that the gap will diminish as time goes on and largely disappear with the introduction of DirectX 6, slated for this April. (However, **Next Generation** gives that ship date as much credence as it gives any Microsoft ship date — none.)

In the end, it's hard to discuss any non-3Dfx hardware accelerator without focusing on how it compares to 3Dfx, what it does differently from 3Dfx, and what its strategy is for beating 3Dfx. That in itself should give an idea of just how great 3Dfx's mindshare is among developers and gamers. The company leapt to an early and well-deserved lead, with excellent hardware and developer support at a premium price. But the 3D acceleration war has only seen its first few battles, and PowerVR is poised to make a counterattack. Its alliances with Sega and Microsoft offer a compelling scenario for designers to create content on one platform and deploy it across Microsoft OS-based consoles, PCs, and arcade machines. The low cost should also appeal to consumers, and most importantly, the rendering power and graphics quality should meet or exceed Voodoo^2. The war for 3D accelerator supremacy is far from over, and PowerVR is set to take the battle directly to 3Dfx. ng

Datastream

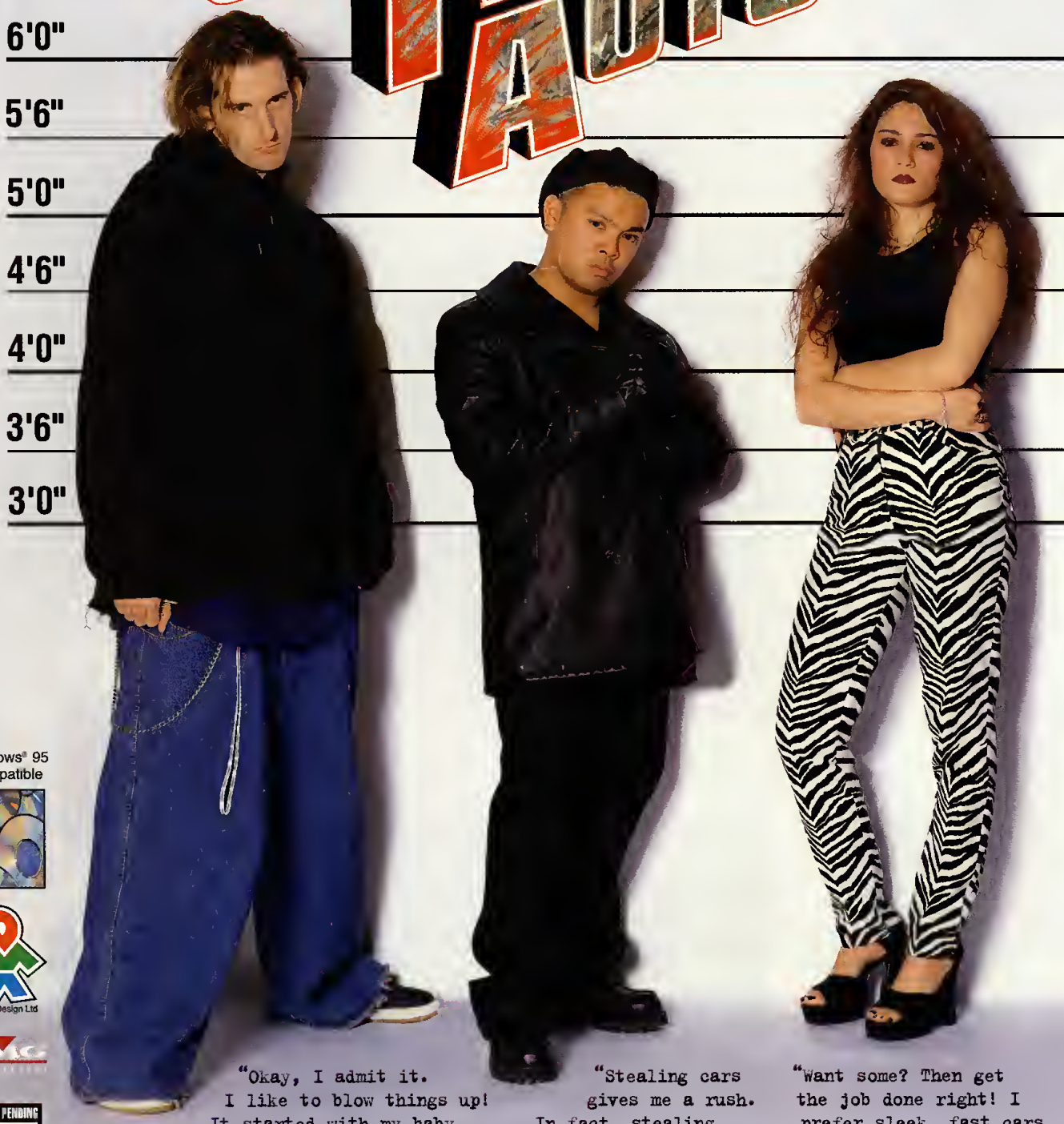
Number of PlayStations sold between 9/9/95 and 3/25/96: 1,000,000. Number of PlayStations sold between 11/1/97 and 11/30/97: 1,000,000. Nintendo's Hiroshi Yamauchi on Sony: "[M]ost of its software titles are silly and boring." Nintendo's Hiroshi Yamauchi on the difference between American and Japanese gamers: "American users welcomed how we have practically brought a Disney character to life in a videogame. Japanese [players] like to be alone in their rooms and play depressing games." Consoles for which a keyboard/computer add-on was announced: Atari 2600, Atari 7800, Colecovision, Intellivision, NES. Consoles for which keyboard/computer add-ons were released: Colecovision. Home platforms for which *Donkey Kong* was released: Amstrad CPC, Apple II, Atari 800, Atari 2600, Atari 7800, Colecovision, Colecovision Adam, Commodore 64, Game Boy, IBM Pcjr, Intellivision, MS-DOS, MSX, NES, Sinclair Spectrum. Platforms that included all four levels: Colecovision Adam.

Texture+Alpha blending modes

Addressing one of the major complaints about the first generation technology, PowerVR has made sure that more methods of blending are now available, taking the interpolated shading values (base color, alpha, and offset color) and combining them with the texture and alpha. They are then alpha-blended by the back-end buffers.

- **Modulate (+Decal)**
  PIX(RGB) = COL(RGB)*TEX(RGB)+OFFSET(RGB)
  PIX(A)=TEX(A)
- **Decal Alpha**
  PIX(RGB) = (TEX(RGB)*TEX(A))+(COL(RGB)*(1-TEX(A))+OFFSET(RGB)
  PIX(A)=COL(A)
- **Modulate Alpha**
  PIX(RGB) = (COL(RGB)*TEX(RGB))+OFFSET(RGB)
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Ultima IX **PC** Millennium Four **PC, Mac** Assault Korps **PC, PlayStation** Ore Tomba **PlayStation** Superbikes **PC**
Virus 2000 **PC, PlayStation** Viper **PlayStation** Last Legion VX **N64** Square **PlayStation** Sega Rally 2 **Arcade**

alphas



Previews spanning the globe

The game development community, like the rest of the world, is quickly lending itself to a global marketplace. This month, we take you from Austin, Texas, to Boston, Massachusetts, to Italy, Germany, England, and Japan, where developers have opened their robes to your discerning eyes. Prepare to be wowed by *Ultima IX* and *Sega Rally 2*, and sit in on interviews with Richard Garriott, Tetsuya Mizuguchi, and Kenji Sasaki.

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The epic RPG returns ... for the last time?

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Model 3 racing just got better, and dirtier

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Boston-based boys launch a genre-twister

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The scoop on Japan's latest robot blaster

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The long-awaited sequel to *Virus*? Uh-huh

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From the wreckage of *Tunnel B1*, a game

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Lockheed Martin brings its heavy guns

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Virgin's *Screamer* team goes two-wheeling

96 **Assault Korps** PC/PlayStation
Classic *Cannon Fodder* play in a new way

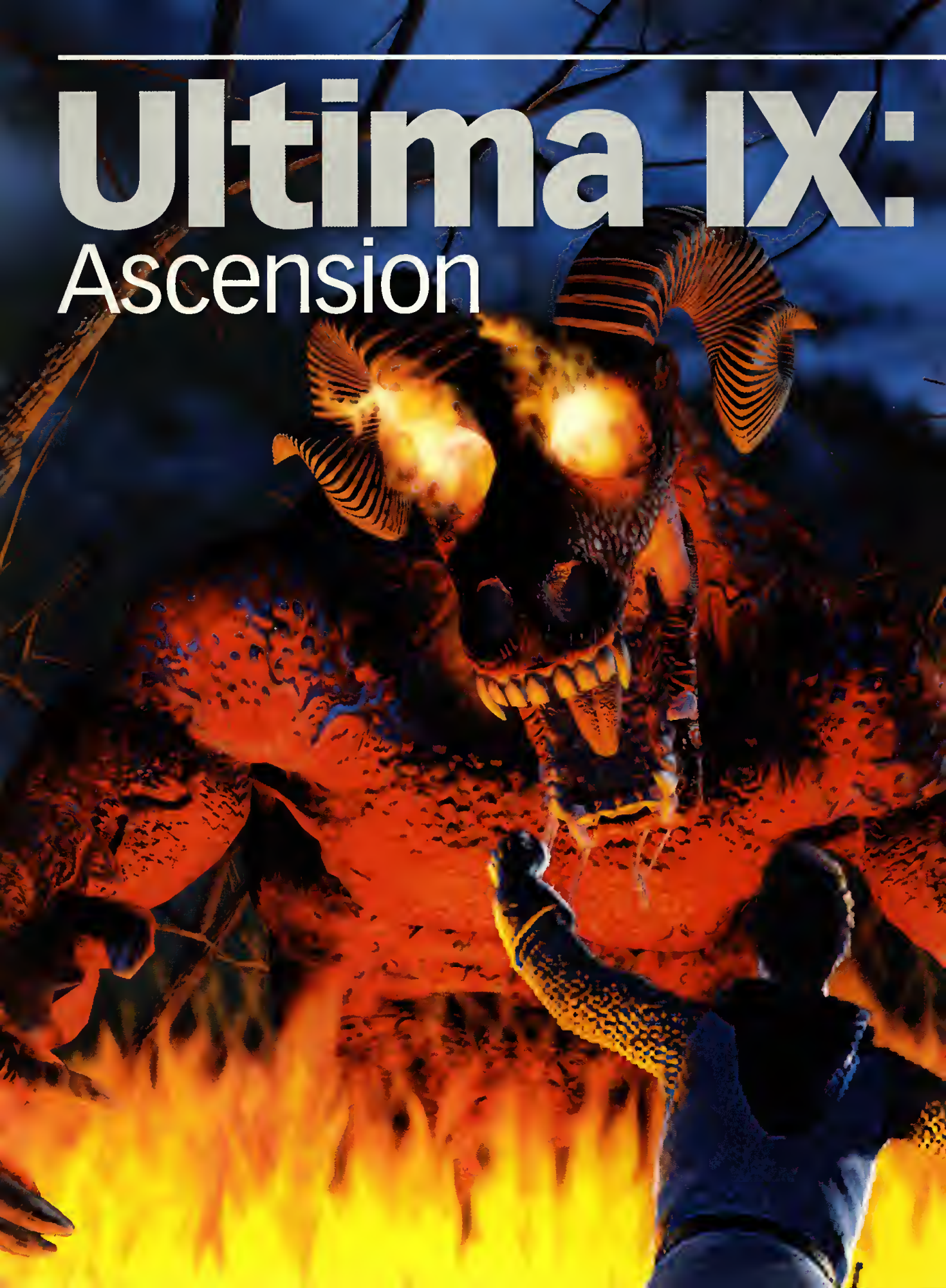
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Ready to go pig riding, caveman?

100 **Square Soft** PlayStation
Exploring *Bushido Blade 2* and *Sokaigi*

103 **Star Ocean 2** PlayStation
An Enix RPG coming to fill your *FFVII* void

CD See the **Next Generation Disc** for more information when you see this symbol

Ultima IX:
Ascension



After nine games, a couple of spin-offs, and more than 15 years, the best-known RPG series is finally drawing to a close — whither *Ultima*?

Format:	**PC**
Publisher:	**Origin**
Developer:	**Origin**
Release Date:	**Q4 1998**
Origin:	**U.S.**

In the history of computer games, very, very few series have had the kind of history that is *Ultima*. Certainly few others have had the kind of far-reaching influence this series has enjoyed — indeed, it's arguable that the Japanese learned everything they knew about building console RPGs from *Ultima I*, *II*, and *III*. And after more than 15 years, Richard Garriott, Lord British himself, is still going strong.

The secret to his success? Simple: Keep a strong storyline, center it around an equally strong gameplay system, and always, always innovate with each new game. In fact, Origin has never reused an *Ultima* engine for a major update, although, to hear Garriott tell it, it all happened almost by accident. "Well," he explains, "as soon as the Apple II came out, it was like 'Wow!' With HPLOTs, which was a command to draw a line in BASIC, you could draw a perspective view of corridors. So that new technology was embraced very rapidly. Then right after that it was like 'Wow — BASIC is a pretty rotten language for doing this; if I were to try to do it in assembly language, we could accomplish a lot more.'"

"It's what I loosely term shaving a snow cone off an iceberg"

Ed Del Castillo, c

The result was *Ultima II*, the first assembly-language program Garriott ever wrote. "Though it was much better than BASIC," says Garriott, "I was learning when I wrote it, so quite frankly, it stunk as far as code was concerned. It was pretty obvious that to do anything else, I'd want to trash that and just start from scratch for *Ultima III*. So this pattern that emerged, the throw-it-away-and-start-over [pattern], wasn't done for any market reasons, but only because it was the only process that made any sense."

Whatever the rationale, this approach has served the series well over the years, as each succeeding game has seemed fresher and even more important than the last. The only possible exception is *Ultima VIII*, something Garriott is quite aware of. "I'm also the founder of Origin," he explains, "so my affinity to make sure that Origin goes well is, quite frankly, even higher than my affinity to make sure *Ultima* goes well, and it directly impacted my ability to participate in the *Ultimas*. *Ultima VIII* represents the bad end of that transition, where quite frankly, my involvement started out high at the beginning but became pretty minimal at



***Ascension*'s 3D engine is absolutely top notch. When complete, these 8-bit textures will be replaced with even higher detailed 16-bit ones**

ng alphas CD

As always, the world of *Ultima* is both complex and varied. With 3D sound and numerous environmental effects, it practically breathes

the end. I really think that the game suffered because of that."

But now, with *Ultima IX* in development, Garriott has the opportunity to get the series back on track. He started by hiring Ed Del Castillo, the producer of *Command & Conquer*, away from Westwood to be the producer of *Ultima IX*. This frees Garriott to be the executive designer, a role he feels more comfortable with. "I'm really trying to avoid getting caught up in the company growth," he says, "because *Ultima* is one of the most valuable properties in the industry. I could have a job running the whole business, but it would mean I would never be involved in game design. So I'm discarding the mantle of authority within even my own group so I can stay at the designer level, which I know is an area I enjoy better and importantly, is also an area which will help me succeed as an individual and help the products and the company succeed."

The **Ultima** time line

Going on 20 years, *Ultima* is the longest-running series of computer games in history, and there are no signs of it slowing down or running out of ideas. Along the way it defined the high watermark in computer RPGs by consistently integrating technical advancements with intelligent game design.

Ultima IX represents the final chapter in the story of the Avatar, a story that, in a clever and contrived bit of reverse story engineering, begins all the way back in *Ultima I*. What follows is a brief chronology of the *Ultima* games, with release dates, platforms, and development notes.

The Age of Darkness Trilogy

Ultima

Platform(s): Commodore 64; Apple II; PC; Atari 8-bit
Release date: 1980

Plot: Lord British sends the hero on a quest to defeat the evil wizard Mondain, whose "Gem of Power" renders him virtually invincible.
Development notes: Originally released only for the Apple II, *Ultima*, although crude, managed to achieve a simple harmony of design and gameplay, laying the groundwork for the series. It was rereleased in '86 for the PC and C64 with some minor improvements by Lord British.

Ultima II: Revenge of the Enchantress

Platform(s): Commodore 64; Apple II; PC; Atari 8-bit
Release date: 1982

Plot: While *Ultima II* introduced the moongate system, a key element in later *Ultimas*, it was still essentially a rehash of the original. This time, the evil mage in need of vanquishing is Minax, Mondain's student and lover.
Development notes: This was Garriott's first attempt at programming in assembly language, an attempt that he says "stunk." However, it was noticeably faster and smoother than its predecessor.

Ultima III: Exodus

Platform(s): PC; Commodore 64; Commodore Amiga; NES; Apple II; Macintosh; Atari 8-bit; Atari ST
Release date: 1983



The Avatar of Virtue comes up against his ultimate challenge in *Ascension*. Will it be necessary to destroy Britannia in order to save it?

Garriott's refocusing has resulted in a delay of more than a year for the game. During this time, Origin shifted resources toward launching *Ultima Online*. The hiatus has proven to be a blessing. "Any time you put a product on hold for any length of time, there's a huge risk associated with that because this industry moves so fast. The things you were targeting nine months earlier, like hardware platforms, are dwarfed quickly," says Garriott. "Interestingly though, we had something very fortunate happen with *Ultima IX*. Even before this hiatus, it was a 3D game, but the camera perspective was a three-quarter view, down from above, parallel projection engine, and there was a reason why we did that. Fundamentally, we kept a constant camera pitch as well as no parallax from the camera so that as the world moved, we could rerender only the strip of the world that was coming into view. That was because we wanted the tables and chairs and wall clocks and water wheels and the amazingly rich things you normally find in an *Ultima* in 3D that's a very, very hard thing to do, and so nine months ago, even with that kind of fixed camera pitch and strip rendering, the polygon count that we were trying to cram through that software renderer was taxing our ability to get a frame rate that was even remotely reasonable. Fortunately for us, in the last nine months, hardware has come along and saved the day. Now that the hardware has caught up to us, it will let us do the game the way it should have been done in the first place."





The 3D engine can move from an outdoor setting to an indoor one completely seamlessly

Ultima goes online

Ultima Online **is the most ambitious game ever attempted. Richard Garriott's vision of creating a living and constantly evolving world populated by thousands has proven itself impressive, but it's naturally suffered from some growing pains along the way.**

When the game first went public, there were major flaws still in the code. Since then, updates have fixed the vast majority of the problems. These repairs have provided far better balance within the game world with more things for players to do.

The key to enjoying *Ultima Online* is taking the history, messages, and tradition of earlier games in the series and exploring the world in that context with others. Magic, monsters, and mantras all translate perfectly from the original games. Likewise, the code of ethics embodied by *Ultima*'s classic virtues are expected to be understood and adhered to in order to be successful within the scope of the game. Naturally, this isn't always the case, but variety always makes for interesting adventures.

Where the game diverges from others in the series is that no single player is the hero of the game. You aren't the central character around which all of the action takes place, and some have chafed at the necessity of doing mundane work — smithing, etc. — to build a character before adventuring can commence.

You're just one player amid thousands of others, and you're dependent upon their actions as much as they are upon yours to enjoy the game. It is a different gaming experience, and one that requires more effort on the players' part, but the payoff seems to be worth it.

Plot: Once more the hero is called upon to rid the land of a world-threatening spawn of hell called Exodus, the "child" of Mondain and Minax. For this reason, some have jokingly referred to this as the "Dysfunctional Family Trilogy."
Development notes: *Ultima III*'s innovations were numerous, but none so big as the inclusion of a party system. Four-player controlled characters with their own attacks and spells dramatically increased the tactical elements of combat.

The Age of Enlightenment Trilogy

Ultima IV: Quest of the Avatar

Platform(s): PC; Commodore 64; Commodore Amiga; NES; Apple II; Sega Master System; Atari 8-bit; Atari ST
Release date: 1985



Plot: Lord British sends out a call for an Avatar, or a human embodiment of the Eight Virtues, a code of ethics upon which he feels his people should base their lives. After relentlessly perfecting himself, the hero ventures into the Stygian Abyss to consult the Codex of Infinite Wisdom, sealing his fate as the ultimate good guy.
Development notes: Increasingly aware of the social impact his games had on those who played them (including protests about "satanic influences," the first clue his games had some relevance outside the world of Britannia), Garriott responded with this landmark game, which properly introduced the Avatar, Britannia, and the Eight Virtues. Relying on an unconventional storyline that centered on moral self-improvement rather than bashing some omnipotent bad guy, *Ultima IV* proved to be the biggest-selling *Ultima* yet and is remembered as the game in which *Ultima* truly came into its own. The major improvements in this game were the implementation of a dynamic conversation system, in addition to a larger party, much larger world, and a complex (some might call it needlessly so) spell system based on reagents and magic words, its eventual release on a huge number of systems is a testament to its impact.

Britannia has a lot of places to go, and all of them have been designed and modeled in completely different styles

Indeed, the 3D engine demonstrated to **Next Generation** is easily the most impressive we've seen to date. It uses the familiar, over-the-shoulder, third-person camera perspective we've come to expect from *Tomb Raider* and *Mario 64*. However, the algorithm used for camera movement and character control is simply amazing. The player's character — the Avatar of Virtue, as always — can not only move anywhere across the landscape and still keep everything important in view, but can also seamlessly move from outdoors to indoors with no loss of clarity. Indeed, the transition is so smooth, even running on the early, unoptimized version of the engine, it seems like the most natural thing in the world. Once the "gee whiz" factor wears off, it is easy to forget the camera is even moving at all — it just seems as if it's always where it should be.

The control scheme, while still being worked on, is equally intuitive. "A game I love to watch being played is *Tomb Raider*," Garriott says. "However, I just bought *Tomb Raider II* and I can't play it, which saddens me because I love to watch it. But its interface is complex. It's a dexterity test, of which *Doom* and *Quake* and *Tomb Raider* are examples. We're not creating one of those."

Amazing control aside, the game is also incredibly beautiful, even more so than the screenshots that accompany this article would indicate, since as of this writing the texture-rendering portion of the engine hasn't yet been integrated. "See, in our former software renderer," Garriott explains, "we'd convert all our 16-bit, wonderfully detailed textures to 8-

Garriott and company are shooting for a 3D *Ultima* with a world as rich and complex as any 2D *Ultima* — we think they're succeeding

Ultima V: Warriors of Destiny

Platform(s): Apple II; PC; Commodore 64; Commodore Amiga; Atari ST; NES
Release date: 1988

Plot: Lord British is abducted by the Shadowlords, born from shards of Mondain's Gem of Power. A usurper named Blackthorn seizes power and imposes a fascist police state, forcing people to follow the Eight Virtues — or risk more than just bad karma. As usual, it is left to the Avatar to make everything right.
Development notes: *Ultima V* had a much more complex and detailed story than its predecessor, with many interwoven plotlines. Not a great leap technologically, it nevertheless continued to refine the engine and added a slew of incremental changes, including day and night cycles, more realistic characters, and enhanced options in combat.

Ultima VI: The False Prophet

Platform(s): PC; Commodore 64; Commodore Amiga; Atari ST; SNES
Release date: 1990

Plot: A race called the Gargoyles plagues Britannia, seeming to be hell-bent on achieving some goal known only to it and leaving destruction in its wake. It is up to the Avatar to discover just what it is the Gargoyles are after, but in the process, he discovers that it's all his fault. A great twist on the "hero wipes out evil race, saves world" storyline.
Development notes: Considered by many to be one of the strongest *Ultimas* overall, this game represented the largest technological leap of any *Ultima* game to date, with a seamless game world, large character portraits, and considerably improved graphics. The storyline nicely balanced its narrative with giving players freedom to approach the story from any angle at their own pace.

The Guardian Trilogy

Ultima VII: The Black Gate

Platform(s): PC; SNES
Release date: 1992

Plot: Once again the Avatar is summoned to Britannia when his adopted homeworld undergoes a crisis. A shady, cultlike organization called "the Fellowship," and its leader Batlin have taken hold of the people's hearts and minds and seems to be linked to a series of bizarre murders throughout the land, as well as a sinister figure known as the Guardian. As the Avatar investigates, he discovers that the scope of the threat is larger than anyone had imagined.



The final *Ascension* will be nicely populated with NPCs, and will feature more than one character to play





Take a good look — eventually *Ultima Online* will use this engine

bit textures. We'd build the models in Lightwave ... and we'd do software rendering. But 8-bit was as high as we could go with textures. Fortunately now, we can take that same art data and keep the 16-bit textures throughout — today it's only 8-bit, but it will be 16-bit all the way through — and the visuals the artists created are now truly showing through with the new technology pipeline." Imagine the pictures on these pages being blessed with several orders of magnitude worth of finer shading and detail (eight orders of magnitude, to be exact), and you'll get the idea.

Obviously, this will require hardware acceleration. *Ultima IX* supports 3Dfx's Glide API directly, as well as Direct3D. In pushing the envelope, however, the *Ultima* team is careful not to leave anyone behind technologically, believing firmly that everyone should enjoy the game as much as possible. Del Castillo talks enthusiastically about one planned solution: "One of the things we want to do, and have the luxury to do, is that all our geometry is completely dialable. That is, we're creating higher meshes and lower meshes of each one. What we want to do is automate the process so it's scalable based on the performance of your game."

And Garriott emphasizes that all this impressive programming isn't just for show. "There were a couple of major thematic goals for this project," he explains, "and probably number one is immersiveness. We've worked very hard to make sure that the world we're creating is as hyper-realistic as possible. I think you'll find we're by far the most complete 3D thing ever, but there are also all the subtle touches that make reality real. There are sound cues in the real world that are spatially presented. So our sound effects are fully three-dimensional,

Development notes: Another complete overhaul of the engine, this game was unparalleled in its rich visuals and sound, as well as the level of interactivity with the world. Due to the immersiveness, scope, and detail, this *Ultima* was the closest thing to a world simulation as the series ever came — that is, until *Ultima Online*.

Ultima VII: Forge of Virtue (add-on for The Black Gate)

Platform(s): PC
Release date: 1992



Plot: The Isle of Fire, the original home of Exodus in *Ultima III*, resurfaces in the middle of the ocean. The Avatar must brave the dangers within to obtain the powerful Daemonsword and stop the rebirth of Exodus.

Ultima VII part 2: Serpent Isle

Platform(s): PC
Release date: 1993

Plot: The Avatar chases Batlin to a strange world called Serpent Isle, settled by Britannian refugees hundreds of years ago. In the most linear, but one of the most satisfying *Ultima* storylines, he must learn the secrets of this new land and foil another plot by the Guardian to destroy Serpent Isle and Britannia.

Development notes: Like *Worlds of Ultima* that preceded it, *Serpent Isle* was another attempt to cut development costs by reusing an existing engine — an attempt that was not completely successful. While well-received by critics, it was criticized by many fans for its linearity and bugs.

Ultima VII part 2: The Silver Seed (add-on for Serpent Isle)

Platform(s): PC
Release date: 1993

Plot: This add-on takes the Avatar back into the distant past of *Serpent Isle*, where he learns about the principles and history of the culture, and restores the Tree of Balance.

Ultima VIII: Pagan

Platform(s): PC (3.5 & CD-ROM)
Release date: 1994



Plot: Fed up with the Avatar's constant meddling, the Guardian deposits him in a world under his control, leaving him to fend for himself, totally alone. In a hostile world. To return to Britannia, the Avatar must defeat and harness the powers of the four Titans, incarnations of the elements.

Every structure in the game is created from scratch. There are no "stock" buildings, and minimal use of repeated textures

spatially placed." Also adding to this immersive feeling is a physics model that adds a lot of realism in subtle ways. For example, as wind blows through the world, things like signs or drying herbs or flowers on the vine blow and rock in the breeze. Water undulates and becomes more wavy at certain times. Says Garriott, "The game world is full of sound and motion and sensation that we think will amplify the immersive feel."

Yet the immersiveness of an *Ultima* game is, and always has been, much deeper than just its visuals and sound, or for that matter, its story. Del Castillo elaborates: "It's what I loosely term shaving a snow cone off of an iceberg. The reason why *Ultima* has been so successful in the past is there's a huge amount of backstory. If you talk to Richard about what *Ultima V* was about — you can pick any *Ultima* — he can go on and on and on about it and you'll be going,

Development notes: Much maligned among *Ultima* fans, this game represented the worst of Origin's fixation on pushing the envelope technologically. Suffering from a marked lack of direction, the gameplay suddenly shifted toward action elements such as running and jumping. Unresponsive controls, frustrating puzzles, and an uninteresting plot characterized *Pagan*, the black sheep of Garriott's domain. The next year, Origin went so far as to release a letter of apology from Garriott along with a patch, which changed the game's control scheme and fixed some plot holes.

Ultima IX: Ascension

Platform(s): PC CD-ROM
Release date: 1998

Plot: After obtaining the godlike powers of the Titan of Ether, the Avatar returns to Britannia to find his worst fears realized. In his absence, the Guardian has taken over the world. He must somehow find a way to free the people of Britannia from the Guardian's grasp.
Development notes: Following multiple changes to the engine and overall design, including a period where almost the entire team was drafted to work on *Ultima Online*, much is resting on the success of *Ultima IX*. Origin has something to prove after a long hiatus following the regrettable *UVIII*. Parent company EA will expect much out of *UIX* this holiday season, already earmarking and grooming the game to be the publisher's first ever year-end top 10 game.

Worlds of Ultima

Savage Empire

Platform(s): PC
Release date: 1990

Plot: Set in a world far removed from Britannia, *Savage Empire* finds the Avatar in an exotic jungle land, populated by tribespeople, dinosaurs, and intelligent reptilian beings.
Development notes: Ostensibly an attempt to streamline and economize development by reusing the *Ultima VI* engine, the two *Worlds of Ultima* games were mostly praised by critics, but a lukewarm reception by fans meant the series was abandoned after two games.

Martian Dreams

Platform(s): PC
Release date: 1991

Plot: The Avatar travels to Mars in this similarly bizarre story, where he meets luminaries such as Albert Einstein, Theodore Roosevelt, and Vladimir Lenin. He must find a way off the planet, home to a highly evolved, plantlike race.

'Um, when did that happen in the game?' And he'll just say, 'Well, it didn't, but it was symbolized by this and you saw the manifestation of it in this.' That's what kept those *Ultimas* together, in the same way that Tolkien even had languages for every race. [For Tolkien] it wasn't just about writing those books, it was about 'Let me look at my time line and see what's happening in this world between those years.'" *Ultima*, he explains, has the same kind of continuity. "[We say] 'OK, we want to do this. Well, does that jibe with this?' As a result, you have this really, really cool world that stays continuous and stays constant; and I think that the old-time players, the big fans, are really gonna enjoy the fact that we maintain our consistency with what the *Ultima* universe is."

Despite all the changes in the game's engine, *Ultima IX* remains an *Ultima* game, with all the history that entails. Importantly, however, it is the end of Garriott's "trilogy of trilogies." When the game is over, the Avatar will have accomplished his life's mission. Rest assured, there will be an *Ultima X*, but the world of Britannia — well, let's just say it will be a very, *very* different place. (We promised not to reveal the game's story arc, and if you're any kind of fan, you wouldn't want us to anyway.)

Del Castillo sums up the future this way: "What makes me happy is there's no collective vision about what *Ultima X* is going to be or could be ... *Ultima X* will really lay a lot of groundwork because a whole new universe has to be created, a whole new system. It really has to have its own set of rules and set of understandings: How do spells work, and why? What kind of weapons are there, and why? What kind of cultures are there, and why? All that stuff needs to be done up front — and then we shave the snow cone from that iceberg."

***Ascension* will feature a pseudo party system that enables players to use different characters at various times**

***Ascension* has taken much longer than expected, but from what we've seen, it's going to be more than worth the wait**

Ultima Underworld

Ultima Underworld: The Stygian Abyss

Platform(s): PC; PlayStation (Japan only, 1997)
Release date: 1991

Plot: Falsely accused of a crime and thrown into the mother of all dungeons, the Stygian Abyss, the Avatar must rely on his wits, sword, and spells to rescue a baron's daughter, stop a demon, and get to the surface alive.
Development notes: This game revolutionized 3D, first-person games as we know them today, by freeing gamers from monotonous step-based movement. This did wonders for the feeling of immersiveness and realistic gameplay. Much more action-oriented than traditional *Ultimas*, this game still maintained the high level of storytelling the series is known for.

Ultima Underworld II: Labyrinth of Worlds

Platform(s): PC
Release date: 1992

Plot: Taking place exactly one year after the Avatar thwarted the Guardian's plans in *Ultima VII*, the whole of Lord British's castle and everyone inside are encased in an impenetrable dome by the Guardian. It is up to the Avatar to venture deep into the dungeons under the castle and travel to alternate worlds by means of a magical jewel, and try to discover how to foil the Guardian's plans once again.
Development notes: A step up from its predecessor, *Labyrinth* offered a larger 3D window, more levels, a slightly faster engine, and a more *Ultima*-like plot.

Ultima Online

Platform(s): PC CD-ROM
Release date: 1997

Plot: Multiple stray shards from Mondain's Gem of Power (those shards really seem to get around, don't they?) have created alternate *Ultima* universes, all with their own autonomous world and set of rules.
Development notes: The most ambitious, highest-profile "persistent online world" in existence, *UO* is staggering in its complexity and attention to detail. From mercenary to mage to baker to lumberjack, *UO* has something to suit any kind of character development or style of play. Despite loud criticisms from players, Origin still can't get copies to store shelves fast enough.

An interview with Richard Garriott

Now that *Ultima Online* has been up and running for a while and *Ultima IX* is coming into the stretch, **Next Generation** talks to the man who watches over them both to find out what one has to do with the other.

NG: One of the interesting things about a persistent online world is the social dynamics that will evolve. It's only a couple of months into it, but how are the communities functioning — are they getting along?
RG: Yeah, even at the outset. Actually, even before we launched the beta test, there were already guilds and subgroups forming for various purposes. So when we went live, from day one we had a fairly rich community activity. It's evolved very quickly from there, and of course the evolution, like you say, is very early in its long-term build. But almost immediately you saw things, like about half the players participate in what you might consider adventuring, in the sense that they go out and hunt creatures or monsters and collect treasure, and about half participate in what you might call the economy, in that they generally hang out in towns, developing their skills of creation and trade, and they build the infrastructure that supports society.

The next kind of split is that a lot of the early adopters of *UO* were of two camps, one of which are the role-playing gamers, lots of old *Ultima* players, and the other is what you might call the *Quake* and *Diablo* players, who came into the game and immediately started to rampage. Their whole philosophy of life is bent upon destruction of each other and everybody else. Well, of course the first group of players cries foul play, so we as the creators go, "No, that's not foul play, it just needs to be carefully managed within the fictional scope of the game." Then as that settled in, the rules of the game and the laws of Britannia began to draw lines in the sand of safety — the proper amount of safety and the proper amount of fear.

Then began the player-built cities and player-built communities. One of the things you can do in the game is buy hard assets like homes and castles. We're beginning now to see villages independent of the Britannian protection of the main cities start up in the world, and player-built cities have to self-regulate, self-govern, self-protect, which can take a pretty large commitment on the part of a large number of players to really pull off successfully.

We've also had to help, even in game code, to support that endeavor because we like that community emerging, and so people will do things like build homes and lock that home and hire a guard to guard that home. But other very clever players would find ways to break in. For example, people found that they could get into castles by using their carpentry skills to build crates and then stack the crates like a staircase and invade the castle. And some of the players went, "Hey, that's cheating," and the creators went, "No, that's perfectly fair." However, we want you to be able to protect your homes so now we've added the feature of traps.

So we're continually feeding these communities with new features to help support the reality that's building. And what the players are finding after a couple months of playing is that even some of our most vocal complainers of two months ago have now become our most ardent supporters. And of course they're playing all the time, and they realize that no, we shouldn't make rules to stop things which some people don't like. We should provide people with the tools by which they can discourage play styles they don't like, and so the community can build itself. And players are learning a new play paradigm which heretofore hasn't really existed.



Players are learning a new paradigm which heretofore hasn't existed

NG: Do you still have designers adding to the world, or are you going to put that all together and then release a 2.0 at some point?
RG: Well, we're going to do a bit of both strategies *Ultima Online II* will be a whole new ground-up technology based very much on *Ultima IX*, and that will not be an iterative patch. That will be a new product they'll have to buy, but we'll find a way to migrate players onto the next game.

However, midyear we hope to release an *Ultima Online I* expansion pack. Odds are good, actually, it will have to be purchased retail, since geography and art are very large, datawise, and so those things we'll probably release as a CD. Features, or at least as many as we can, we'll just continue to give people as part of their ongoing monthly subscription.

NG: From a design standpoint, how do you think *UO* influenced the development of *Ultima IX*, in the sense of introducing more nonlinear elements?
RG: Actually it was very different than you might anticipate. If anything, it was actually the opposite from what you suggest.

NG: Because *Ultima IX* is so focused on making an epic story, it needed a more linear storyline?
RG: Well, interestingly, one of the things *Ultima Online* has taught us about solo-player games is that the last few *Ultimas* have been fabulous world simulations, in the sense you could do anything and everything, literally go from raw material to creating the final goods — and of course, *Online* is like that too. But one of my critiques of those *Ultimas* in hindsight is that it's important to also make sure, especially in a solo-player game, that what you need to do at any moment is very clear, that the challenges are well-sequenced from easy to harder, and that the completion of each challenge is an appropriately celebrated reward. *Ultimas*, as they went from *IV* to *VII* and became better and better simulations, became more and more chaotic in their storyline. This is exemplified in *UO*, which, of course, had no possibility of having a tight storyline. But that experience made us look back at *Ultima IX*. *Ultima IX* really had the opportunity to tell this compelling story — a punchy, all-the-way-through total experience versus more and more open-ended, which is the opposite direction than *VII* exemplified.

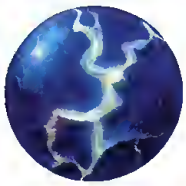
NG: Do you consider the universes of *Ultima IX* and *Ultima Online* to be separate beasts, or is there any overlap between the two?
RG: They overlap very deliberately, but "deliberate" needs to be interpreted. For *Ultima Online*, the world was going to be so large, we wanted to make sure we had a lot of fictional context to draw upon. So we actually drew on all the *Ultimas* and very carefully architected a fiction that started with *Ultima I* and had a separate branch of history, a separate time line that started back at *Ultima I*. By doing that, by having this alternate history, it means we could pull artifacts and characters and elements out of every *Ultima* safely. And the other thing we did is to have the reality of the universe based upon these shards, these individual pieces of this magical gem from *Ultima I*. This meant that we could build as many servers as we wanted and explain this parallel reality that we were building. We also built a fiction by which one of the goals is to reunite those shards to bring all the reality streams back together, so if we ever want to shut down a server someday in the future — as we're presuming we're going to ultimately need to — we now have a reason to explain merging a server into one of the others.

And we've been doing things in *Ultima IX* like making sure we either include characters or events that may have been parallel to what's happening in *UO*. So we're making sure that we tie those fictions, those universes together quite closely right now.

NG: Is there ever a temptation to take a character or event from the single-person game and let it loose in the online world?
RG: Yeah, although taking a story element directly out of a solo-play *Ultima* is tricky. In online game events, it's very important to make sure multiple people can participate in a meaningful way. In solo games, the world is here for *you*, and you are *the* one hero. But in an online world, if there's a crisis and there are 15 people vying to solve it, it's a lot of effort to put into making something that few people see or participate in. Or you can think of something more complex that allows multiple people. That's a real design challenge that we're learning online.

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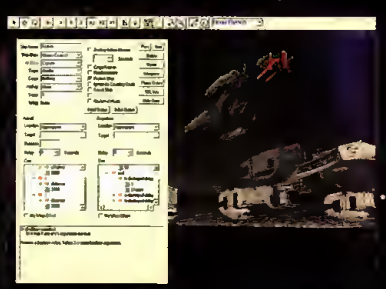
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Sega Rally 2

Sega's premier off-road racer returns to the arcade with graphically stunning Model 3 technology. Will it play as good as it looks?



As in the original *Sega Rally*, each race features 15 cars. Arcade operators can link up to four cabinets for simultaneous racing

Format:	Arcade
Publisher:	Sega
Developer:	Sega/AM Annex
Release Date:	Spring 1998
Origin:	Japan







Cars will powerslide through turns (above left) and catch air (top)







Model 3 graphics enable the designers to make truly detailed models

Considering the coin-op version of *Sega Rally* is two years old, it's a testament to its development team that subsequent off-road games for both the arcade and consoles still, to put it politely, pale in comparison. Only recently, with *Top Gear Rally* for N64, has anyone come close to capturing the essence of the rally experience.

Despite rally racing's lack of appeal in the U.S., *Sega Rally* delivered a racing game that excited arcade players. And given the sport's popularity in Europe and Japan, there are certainly enough fans worldwide to warrant a sequel. *Sega Rally 2* is still in the early stages of development, but AM Annex recently revealed a 30%-complete version of the game with a completed cabinet.

While the number of courses and cars have yet to be finalized, new desert, forest, and mountain theme tracks, which were all part of the original, were playable (but still subject to modification). According to Producer Tetsuya Mizuguchi, there are three other stages that are in planning, which would bring the total number to six. Among these, players can expect a winter stage where they will race through falling snow, as well as a night stage that puts them in total darkness, with only the vehicles' realtime headlights to navigate the course.

One nice touch will be the camera flashes coming from the stands, something found in real races. "The better the player drives, the more flashing cameras they'll get," Mizuguchi says. "In this way, the game becomes more intense." This is just one detail that has been added in his attempt to build a racing game with a realistic atmosphere. "We are also thinking about making the public react," he says. "For example, some people may retreat if the car gets too close to them."

Sega Rally 2 offers natural terrain and less industrial surroundings

The early *Sega Rally 2* gameplay feels similar to *Sega Rally*, complete with the signature powerslide turns. And even at just 30% complete, the game is already very enjoyable. The driving model features



Locations are based on real-world settings, but the tracks aren't based on real rally circuits. The desert stages are inspired by landscapes in Thailand, and the mountain courses come from a peak near Monte Carlo and Corsica

several advancements over the first game that enhance the realism, for example, cars can spin 360 degrees. For the final version, the team expects there to be six playable cars and hopes to allow players to choose different paths on each track. Also probable is a "time attack" mode.

But all of these enhancements will come in time, as the gameplay, says Project Director Kenji Sasaki, is still undergoing improvements. "Graphically, the game has been powered up," Sasaki says, "and because *Sega Rally 2* offers some really superior graphics, we lost the balance between gameplay and graphics. We have to find some innovative features in the gameplay in order to counterbalance the visual improvements."

Sasaki is right about the visuals. Built on the high-end Model 3 arcade board, all the backgrounds are 3D and exceptionally realistic. Unlike *Super GT*, the first Model 3 racer, *Sega Rally 2* offers more natural terrain and less high-tech, industrial surroundings. The effects

"The game will feature effects that have not been used before"
Tetsuya Mizuguchi, producer

include flying sand and persistent tire marks on the ground. Car windows will be transparent but will also reflect the surroundings with fantastic environment-mapping techniques. Mizuguchi says



According to Project Director Kenji Sasaki, *Sega Rally 2* will use only 70% of the Model 3 performance capabilities







Only four cars were selectable in the demo mode — the Toyota Celica, the Lancia Delta, the Lancia Stratos, and the Subaru Impreza. Possible additions include a Peugeot 306, a Renault Laguna, and some kind of Ford





Excellent environmental reflections can be seen in rear windows (top)

more effects will be added before completion, like dirt accumulation on the vehicles, but he insists on keeping others secret, merely revealing that the game "will feature some effects that have not been used before."

While it's easy to keep some of the game's effects secret, it's not so simple a task when it comes to the brand new cabinet. Designed by AM4, the R&D division dedicated to cabinet design, it is made of red metal tube bars and will be mounted on hydraulic pistons. The cabinet design was inspired by the Joypolis special cabinet used for *Sega Touring Car*, featuring a real car mounted on hydraulics. The player's seat will move according to the car's movements, and braking suddenly will even cause the seat to nose-dive like a real car. Mizuguchi is presently working on a side hand-brake system (effective for making 360-degree spins), but this feature will only be included, says Mizuguchi, "if it really improves the gameplay."

As music plays an important part in Mizuguchi's life (much of his time outside the office is dedicated to Tokyo's thriving techno culture), sound design hasn't taken a backseat in this game. Two small speakers built into each side of the seat surround players in engine sound and enable them to feel the motor's vibrations through the seat. The game will also simulate all the small noises that audio designers sometimes overlook, like small stones flinging against the car's body. Of course, the music will be techno-based and will feature the same singer from *Sega Rally*.

Mizuguchi is presently working on a side hand-brake system

The game will have been in development for a year in March, just one month after the roughly 20-person team received the Model 3 board. Since *Super GT*, there simply hasn't been a better-looking racing game, but with *Sega Rally 2* racing in from the horizon, *Super GT* should not only be surpassed in beauty, but in racing realism as well.



With a faster CPU, opposing cars will feature advanced AI. While they won't make a conscious effort to block your car, it will be harder to win

An interview with

Tetsuya Mizuguchi and Kenji Sasaki

Tetsuya Mizuguchi and Kenji Sasaki were first interviewed by **Next Generation** (**NG 4**) as AM3 employees were working on *Sega Rally*. After *Sega Rally*, Mizuguchi produced *Manx TT* for AM3 before completing *Sega Touring Car* for AM Annex, the new division he launched. Meanwhile, Sasaki, who was only freelancing for Sega, joined Namco and participated in the development of *Rave Racer*. Having recognized Sasaki's talent, Mizuguchi managed to convince Sasaki to come back to Sega AM Annex and work with him on *Sega Rally 2*. **Next Generation** met with the two developers at the AM Annex office inside Sega's newly acquired building, which houses all the AM R&D departments.

NG: Is the *Sega Rally 2* staff the same as the one that worked on *Sega Rally*?
TM: Half of the staff comes from the AM Annex, the other half comes from other departments.

NG: What innovations has Model 3 allowed for *Sega Rally 2*?
KS: Compared to Model 2, it is much more powerful. Because *Sega Rally* was Model 2, we could not use the transparency effects. The board was also poor at managing particles and lighting. These things became possible with the Model 3. Now, backgrounds appear from far away, cars can run under headlights. The game has become much more realistic than before.

NG: How did you develop the cabinet?
TM: We first decided on a general concept. For *Sega Rally 2*, the sound was really important. It is very difficult to make a good cabinet. We have to deal with parameters like cost, time, power supply limits ...

NG: Do you think the Model 3 cost will limit sales figures?
TM: I do not think so. Any good game can make some good sales figures. It is not a problem at all for us.

NG: How well did *Sega Rally* sell?
TM: *Sega Rally* did not sell well immediately in the beginning. *Sega Rally* progressively entered the game centers.
KS: We really think a good game can sell well. The board cost is not an important factor.

NG: Does each car offer a different driving feeling? Did you drive the real cars?
KS: Yes, the driving feeling is different.
TM: I tried several different cars — the Celica, Delta, Impreza, Lancer. I have not driven the Stratos, I only sat next to the driver. I also had a big accident (laughs). I crushed half of a car!

NG: Given the current rate of technological advancements of PCs/consoles, arcades face increasing competition from the home machines. What do you think is the future for driving games?
TM: Of course, I believe in arcade more than the PC. Playing at home is great, but the way of playing is very different. Arcade games must be very attractive and enjoyable during a short period of time. The game feeling is much more intense than that of a consumer game. When we did the Saturn version of *Sega Rally*, we needed to add different features. Arcade racing games must be much more intense ...
KS: Network play became possible on PC. Even if racing games are mostly dedicated to being played alone, it is presently possible to compete with three or four other players. From a developer point of view, it is an interesting feature.
TM: Consumer racing games can also be based on simulation. Players can buy some parts, for example. It is unthinkable for the arcade games ... I really think both arcade and consumer games offer different ways of playing.



Tetsuya Mizuguchi (left) and Kenji Sasaki

"A good game can sell well. The board cost is not an important factor"
Kenji Sasaki, project director





NG: Is too much realism in racing games a bad thing?
KS: I believe for racing games, the closer you are to reality the better it is. For consumer and arcade games, it is still a different thing. For example, when you are buying some car parts in a consumer game, it is a kind of "real" factor. But for arcade it is different — you need to make the player believe the atmosphere is real.
TM: For fantasy types of racing games too, if there is no reality, the game is not interesting. *Wipeout*, *F-Zero*, and *Mario Kart* are successful because they are based on a realistic game system. You have to distinguish "reality" from "real." Furthermore, the "reality" aspect of a game is not everything. For example, in *Wipeout*, the music was very good too.

NG: Did you use your own tools?
KS: Basically, we made our own tools. At the beginning of the Model 3 development, we used some tools common to Sega — it would have been stupid not to.
TM: When sharing libraries, programs and design may look like the same. So it is better to have your own tools. Using a kind of database is not good — we have to create our own culture.
KS: For consumer games, it makes sense because you keep the hardware for three or four years. But for arcade, boards are changing more often, almost every year, so we do not have as much time.
TM: In fact, only recently have we used computer graphics for arcade games. It has only been three or four years. We are only at the beginning.

NG: What are your plans for the future?
TM: We want to make something radically different. But it does not mean we are going to stop making racing games. If I tell you what I have in mind you will immediately understand ... We are presently on two different projects in the AM Annex. One day, I hope, we will make some consumer games. For a long time I've wanted to create a real bridge between the arcade and the consumer games.


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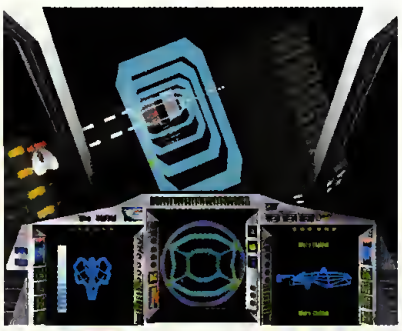
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PlayStation™

Millennium Four: The Right

Combining two classic genres, galactic dogfighting and the first-person shooter, new developer 5D Games may be assembling the next best thing in immersive game worlds





Docking lights (top) work like a runway to guide players into a station. From a cockpit view, a blast wave effect is all that remains of an enemy

Format:	PC/Macintosh
Publisher:	TBA
Developer:	5D Games
Release Date:	Fall 1998
Origin:	U.S.

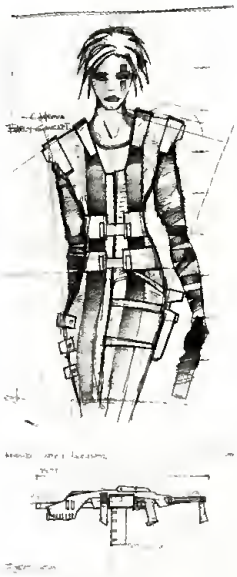
Just outside of Boston runs the Route 128 technology belt — New England's short answer to Silicon Valley. Area businesses include Polaroid and Raytheon, the company responsible for the navigation system used in the Gulf War's SCUD-busting Patriot missile.

Transitions between the two genres will be organic, in real time

And then there's 5D Games. Unlike its neighbors, 5D is not out to win a Department of Defense contract. But the company *is* exploiting technology to display some rather destructive elements in its first game, *Millennium Four: The Right*. "We wanted to put a new twist on space combat simulation," says President Todd Farrington, "so we said, 'Wouldn't it be great to combine two genres?'"

Certainly the company isn't going to produce another marginal genre-mixing title like *Cyberia* or *Shadows of the Empire*, right? No, 5D assures **Next Generation** that the transitions between the two genres will be organic, seamless, and in real time.

Farrington paints the scenario. "Like an *X-Wing* or *Wing Commander* game, you're in your cockpit, you can do all the great dogfighting, but then you see a space station looming in the distance. You can fly up to this space station and actually dock with it. Once you're linked up with it, then you hit the button and get up



Concept sketches reveal a character and gun from the first-person levels







Dogfights will feature traditional "lock-on" targeting and deadly weaponry

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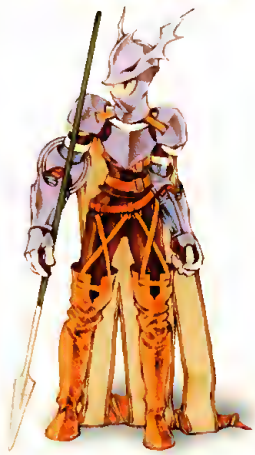
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Princess Ovelia Atkascha

She is the adopted daughter of the late King Omdoria III and his wife Queen Ruvelia. Sheltered throughout her childhood in the safety of Orbonne Monastery, Princess Ovelia Atkascha finds herself in the middle of controversy surrounding her succession to the throne.

For more information on Princess Ovelia Atkascha, get **Prima Publishing's** official Final Fantasy Tactics strategy guide.

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Delita Hyral

Delita Hyral is the childhood friend of Ramza and the Beoulve family. After the death of his sister Teta, he becomes deeply involved in the War of the Lions—although which side he's fighting on is anyone's guess!

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Ramza Beoulve

The youngest son of the Beoulve family and hero of our story, Ramza Beoulve becomes involved in the search for the Zodiac Stones after witnessing the kidnapping of Princess Ovelia.

For more information on Ramza Beoulve, get **Prima Publishing's** official Final Fantasy Tactics strategy guide.

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Summoner

Requirements: Time Mage Level Two
Weapons: Rod, Staff
Helmet: Hat
Armor: Clothes, Robe

Pro: With its MA strength and MP bonuses, the Summoner is one of the game's strongest magicians.

Con: Having one of the largest HP and AT strength handicaps (next to the Bard) leaves this character vulnerable on the battlefield and in need of protection.

For more information on the Summoner, get **Prima Publishing's** official Final Fantasy Tactics strategy guide.

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Ninja

Requirements: Archer Level Three; Thief Level Four; Geomancer Level Two
Weapons: Knife, Ninja Sword, Hammer
Helmet: Hat
Armor: Clothes

Pro: High speed and movement ratings along with double weapon attacks make this character a powerhouse on the battlefield!

Con: Low HP totals put the character at risk on the front line.

For more information on the Ninja, get **Prima Publishing's** official Final Fantasy Tactics strategy guide.

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Lancer

Requirements: Thief Level Three
Weapons: Spear, Shield
Helmet: Helmet
Armor: Armor, Robe

Pro: This class's use of Heavy Armor and midranged Spear make it a nice alternative to the Knight class.

Con: When planning a jump attack you have no access to the amount of time it will take to activate.

For more information on the Lancer, get **Prima Publishing's** official Final Fantasy Tactics strategy guide.

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Red Chocobo

Class A Red Chocobo

Move	Jump	C-EV
6	5	10%

Attacks	R/S/M	When Poached
Choco Attack	Counter	Remedy
Choco Ball	Walk in Water	Barette
Choco Meteor	Ignore Heights	

For more information on the Red Chocobo, get **Prima Publishing's** official Final Fantasy Tactics strategy guide.

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Knight

Requirements: Squire Level Two
Weapons: Sword, Knight Sword, Shield
Helmet: Helmet
Armor: Armor, Robe

Pro: The Knight's Battle Skills ability works with both long- and short-range weapons and is great for disabling powerful enemies.

Con: You can disarm Break attacks using the Maintenance support skill.

For more information on the Knight, get **Prima Publishing's** official Final Fantasy Tactics strategy guide.

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5D Games is bent on bringing superb sci-fi effects to *M4*. Expect excellent lighting from planets and lots of debris from destroyed ships

seamlessly from your cockpit, and now you're in a full 3D world like *Quake*."

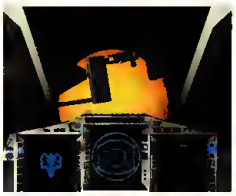
In this, 5D has succeeded beautifully. In an early demo shown to **Next Generation**, a player could dogfight enemy ships, fly into a space station, and with a realtime keystroke, exit the cockpit and explore the station. And since the universe remains continuous, it's possible to find a room with a window that overlooks the bay where the player's ship is docked. This way, players can also keep an eye on any dogfighting that may be occurring around the station as well. While it was possible to explore the space station interior during the demo, the first-person shooting elements had not been implemented. Like its space combat counterpart, the first-person segments of the game will also be action intensive.

The title refers to the fact that the game is set in the 34th century, or fourth millennium. (Obsessive-compulsive gamespotters can relax, though — you haven't missed anything, even though the game's called *Millennium Four*.) After centuries of off-world colonization, Earth has become a veritable wasteland and is being managed by the Centauri Cooperative. A group of rebels has revolted against Centauri, however, so the player's character has been hired as a mercenary by Centauri to put down the rebs.

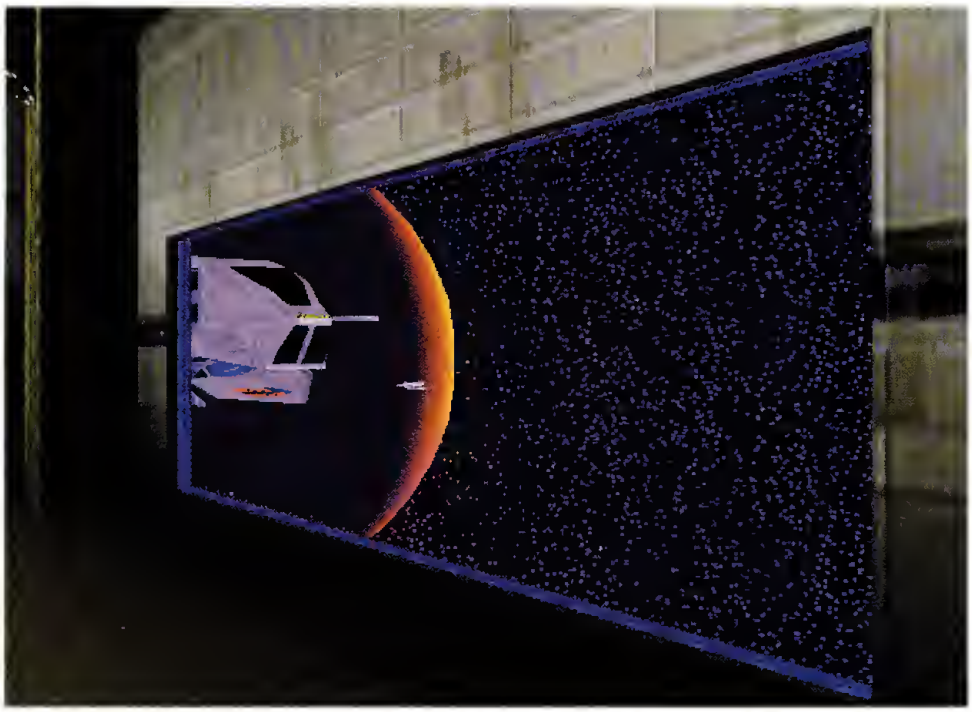
"We've got an outstanding arena for gameplay," says Farrington, who believes the mixed gameplay missions are a natural for advancing the storyline. "We designed the story so it takes you through a space combat sequence. The second part of that mission is to actually dock on the station and go through and have an objective in the first-person perspective view."

Currently, the team is planning for roughly 25 missions, many of which will take advantage of the game's seamless first- and third-person world. For example, in one mission, a player has to board a space station and steal another ship. And for many of the space combat sequences,

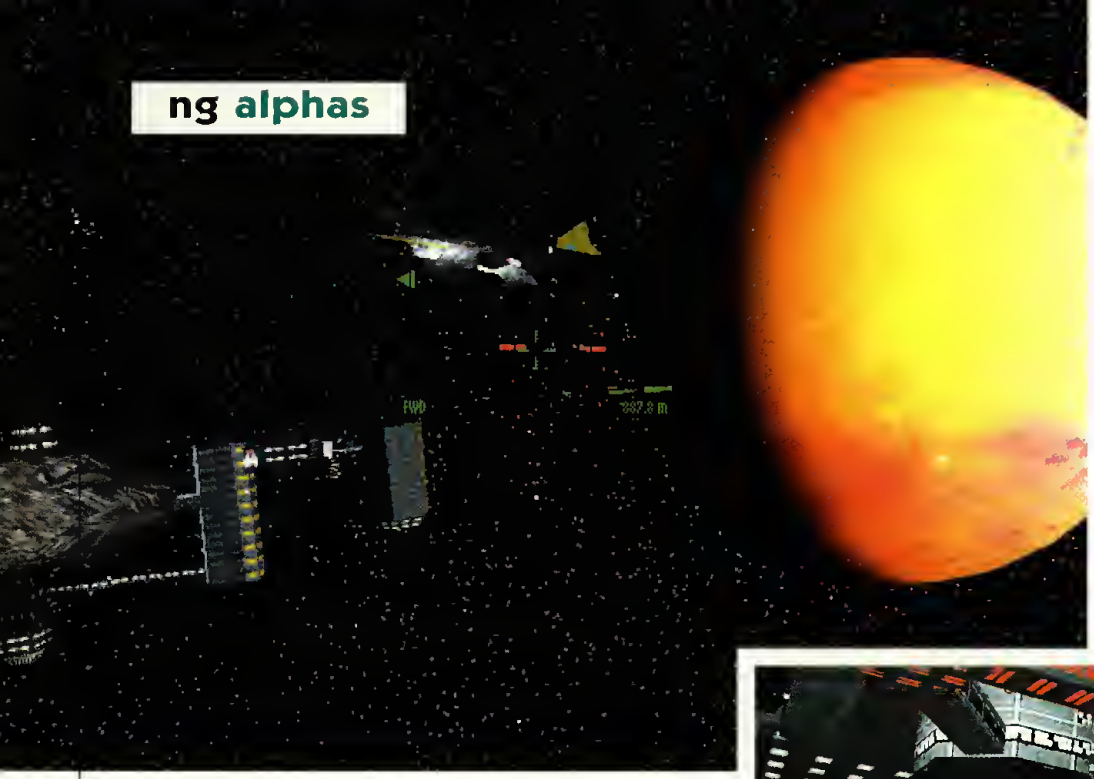


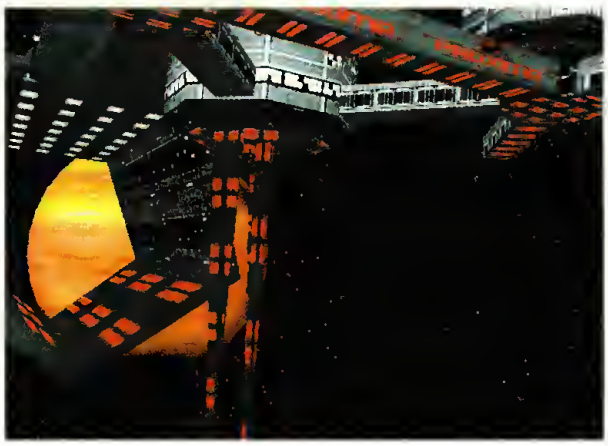


Many moons and planets break up the monotonous space backgrounds



The interiors of these space stations seen in the first-person levels must mesh perfectly with the station's exterior, which can be seen in the dogfighting levels. From this window, players can view their fighter docked outside

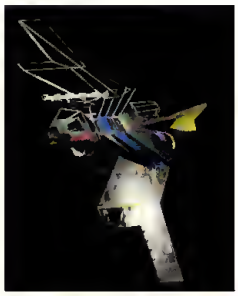




The universe seems to be unfolding to scale, as this base (above) is dwarfed by the planet. This station (right) boasts elaborate design

players will be joined by supporting CPU ships. "There are missions where you're part of a group," says Game Designer Dave Konieczny, "but you're the best, and a lot of them probably won't survive."

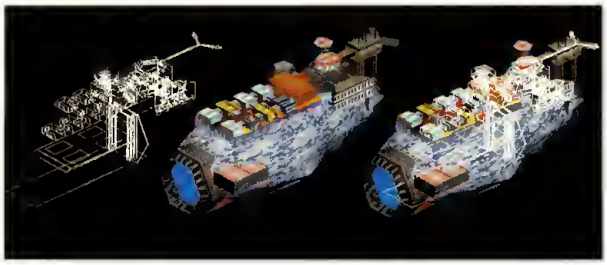
Konieczny also stresses that the missions in *Millennium Four* will certainly not be limited to shoot-everything-that-moves objectives. "It may not be possible for you to kill everything," he says. "You might be flying an escort mission where there are 20 or 30 enemy ships that are out for you, and ... there's no way you're gonna be able to kill them all. Your goal is to survive."



To support this deep world, 5D is building the engine from scratch. The game will support 16-bit textures, colored lighting, and translucency, and it is benchmarked to run at 30fps in 640x480 resolution. "We could've licensed something like a *Quake* engine and taken another space engine and slapped them together," explains Vice President Rick Genter, "but we said, 'No, we want total immersion.'" So Genter and his team of two programmers have been working from scratch, and they are also coding a Mac version. "This is not a one-time engine for one product," Genter says. "On the Macintosh, we are doing a [3Dfx] Glide-specific port, primarily because the Mac 3D APIs are kind of in a state of flux right now. But on the Windows side, we're sticking with Direct3D for now."

This is not the first time that Genter, Farrington, and Konieczny have worked together. The trio began making games at Papyrus (and coincidentally, Farrington also programmed air traffic systems for the aforementioned Raytheon). However, when Sierra bought out Papyrus and proclaimed it "Sierra's racing division," Farrington and five others left to form 5D Games in July 1996. Since then, they have added three artists, making the company a nine-person operation.

"It's definitely nerve-racking," Farrington says, admitting the group has just broken off a deal with GT and is looking for a new publisher. "I find there's a constant re-evaluation process of, 'Can we pull this off?' And then I see the artwork or hear some new music, and it's like, 'We can do this.'"



The artists and designers have had to carefully plan this contiguous world, working simultaneously on the interiors and the exteriors

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Last Legion VX

With the absence of *Robotech,* Hudson steps to the plate with its own robot fighter for Nintendo 64



With Rumble Pak support planned, this may be the closest thing to virtual Rock'em-Sock'em Robots

Format:	Nintendo 64
Publisher:	TBA
Developer:	Hudson
Release Date:	TBA
Origin:	Japan

In Japan, all good game systems must have their own fighting robot game, and that is exactly why Hudson is preparing *Last Legion VX* for Nintendo 64.

With this game, Hudson certainly appears to have taken cues from Sega's *Virtual On*, as battles take place in an arena, and robots are armed with their fair share of futuristic weapons. *Last Legion*'s arenas will be larger than those in *Virtual On*, but unlike *Virtual On*'s simple, wide-open environments, *Last Legion* will offer more in the way of structured environments. As a result, the fighting will require more strategic gameplay as opposed to *Virtual On*'s basic dodge-and-shoot variety.

As in many Hudson games, *Last Legion VX* will offer a story mode. (The plot is based on a mysterious power stone, which is the robots' energy source.) The one-player mode actually resembles an arcade mode in that players can choose the stages and characters. For two-player battles, *Last Legion VX* features a split screen, but in this mode, the level of detail is greatly reduced. Because of this, Hudson gave up on the idea of making four-player battles.

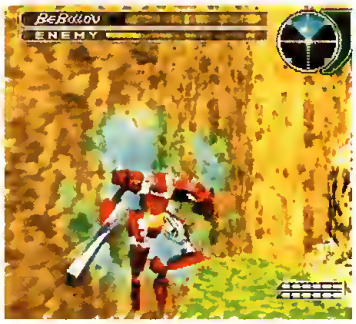
However, nice weapons effects and high-poly models are worthless if the gameplay is lame. (Remember, ugh, *Rise of the Robots*?) *Virtual On* was so successful in Japan mainly because of its dual stick system and its enjoyable gameplay. Only time will tell if *Last Legion VX* can deliver the same quality experience, but more so, if it will even be appreciated in the "not-so-robot-fanatic" United States. ng





Two players have a choice of robots (top) with split-screen action





Robots are equipped with auto-targeting weapons for hunting opponents (left) and jump jets to get to those hard-to-reach places (above)

Virus 2000

Can an old master brush the dust off a classic work and make it worthy of 1998? When it's *Elite* creator David Braben, the chances are good



Landscapes will offer those little touches that suggest a painstaking amount of work. Notice the holes in the windmill's cloth

Format:	PC/PlayStation
Publisher:	TBA
Developer:	Frontier Studios
Release Date:	June 1998
Origin:	U.K.

In an industry where sequels are habitually in development before the originals are released, 10 years is an unusually long time to wait for a follow-up. But David Braben is not your usual developer. Forever associated with the seminal *Elite*, Braben found himself overshadowed by his first commercial effort's runaway success. He went underground, surfacing in 1988 with *Virus* (originally called *Zarch* for Europe's Acorn computer). One of the first games to use filled polygons successfully, *Virus* had the potential to be a landmark title like *Elite*, but many found its unique flight control system unpalatable, and *Virus* never matched its predecessor's popularity.

"That was one of the reasons why I didn't want to follow it up for quite a









The impressive dragon (left) catches the player with a breath of fire









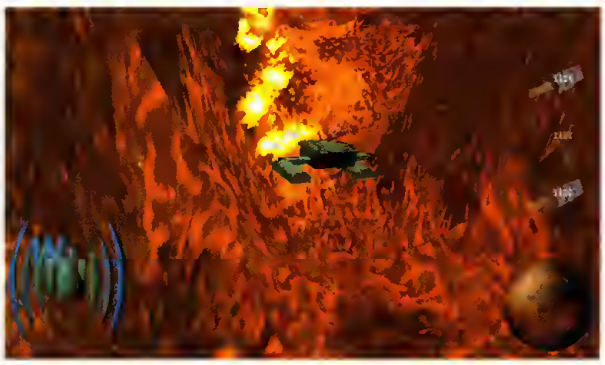
David Braben (top) and two of his engineers, Mark Cox (center) and Jonathan Roach, are hard at work on the problems of 3D game development

while," Braben explains. "There were a lot of problems with the original *Virus* that I wanted to address, but I wanted to move it forward."

The main barrier was the aforementioned controls, requiring a thrust-and-hover technique that was hard to master. Despite this, the controls for Braben's update remain largely the same but have been redesigned to give a more approachable learning curve. "It still feels like the original," Braben contends, "but if you let go of the controls, you won't crash, you'll just fall to a nice hover."

The controls may have made the transition, and the scenario still pits the player against an alien force spreading a virus across a series of levels, but the similarities end there. Now the player has to protect a human population — and can opt to enslave the populace in factories that manufacture ship upgrades. Instead of the primitive, abstract levels of the first game, the player now has various terrains to explore.

Medieval worlds, where the humans live mainly in monumental castles, are wreathed in mist, drastically reducing visibility — a deliberate feature put in by Braben to enrich both the atmosphere and the gameplay. In contrast, the dense jungle worlds are dark, illuminated only by pools of light spearing through breaks in the tree canopy. With some beautiful shoals of fish and predatory rogue sharks, the undersea levels have an authentic feel — a realistic buoyancy for the ship to contend with and a murky look, with less light the deeper the player goes. Then there are deserts, ice caps, and the more exotic alien home worlds at the climax of the game.



This volcano level (above) will demand careful piloting through its treacherous landscape. The desert level (top) hosts lurking spiders

The levels themselves make up a central core of worlds leading from one another, but, claims Braben, "It's much less rigid. Level one to level two to level three, all the way to the finish — that's a bit unimaginative." *Virus 2000* has more concealed worlds than "open" worlds. These are accessible by the conventional exits, and all the worlds are interconnected, making for a more unified playing environment. "For example," says Braben, "on one of our levels is a hidden exit which is quite obvious, and once you've discovered this you start to think, 'Hmm, I'm sure I saw something like that earlier'"

But the most far-reaching change from the original is in the enemy aliens, as Braben outlines: "Rather than going for machines as the baddies, which is so hackneyed now, we've gone for animals, for an organic feel." This simple design decision resulted in most of the technical

and creative challenges that Braben's team has faced in the development of *Virus 2000*. For Project Manager and Lead Programmer James Dixon, it's the key to the game's success. "We thought it would be nice if the creatures had a little expressiveness, if they could cooperate together," he says. "But I'm not sure how realistic any of us thought that was."

The results are impressive: a set of creatures that act and react in a fashion closer to nature than any game has previously managed. "We've tried to get everything looking organic," says Dixon. "Heads look around, the spiders have bouncy bodies. It's a kind of surreal realism. They're not machines, they are creatures attacking you."

Creatures work together too — larger monsters will break down fences and barricades, enabling smaller creatures like ants to trail through these gaps and overrun the player's lines of defense.

To keep the level of detail on the PlayStation as close to that of the PC as possible, Frontier is hoping to use the highest-resolution display available on Sony's machine: 512x512 — something that no previous PlayStation title has achieved. SCEE has done its utmost to help, explains Technical Director Jonathan Roach, but he admits it will be challenging, to say the least.



With subtle lighting and color cues, this medieval town captures the flavor of a cold and damp English countryside

"The main problem with high res," Roach says, "is that you have to get the hardware to draw absolutely everything in a single V-sync, which is a 50th of a second. Because our scenes can get quite complicated, this puts an extreme strain on the hardware and what you end up with is it drawing short." The other problem facing the team is that there's precious little time for rendering on the PlayStation, so everything must be prepared beforehand. That in turn demands an enormous amount of the available RAM. Braben still doesn't know if they'll crack these problems but assures **Next Generation** that in the end, the final game will use "one of the high-resolution modes anyway."

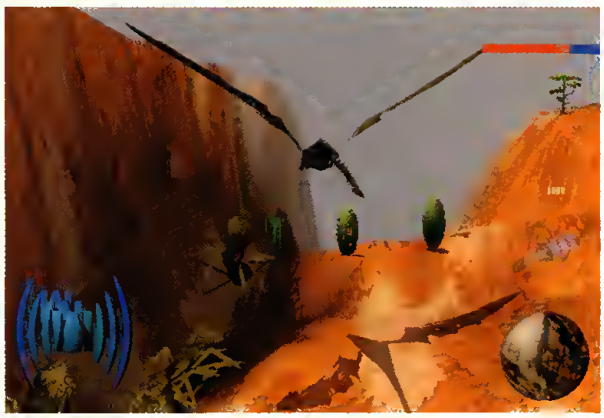
As Herculean as the technical efforts are, Braben insists they are secondary to the gameplay. "I think gameplay is more important," he stresses. "The game designers that I have a lot of respect for are prepared to take the time to put a lot of beautiful stuff in. Peter Molyneux was roundly criticized when they slipped on *Dungeon Keeper*, but it was definitely the right thing to do. Similarly, hats off to Nintendo for holding their machine back until the games were ready. Christ, that was a brave thing to do."

For Braben, "beautiful stuff" is the collection of elements that makes a game world a convincing, organic place where discovery is a constant delight for players. *Virus 2000* is loaded with such flourishes — from boulders that players can dislodge and use to bowl over the aliens à la Wile E. Coyote, to natural "plug holes" under the sea that can be blasted to lower the sea level.

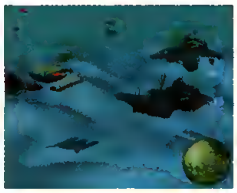
Development on *Virus 2000* hasn't taken anywhere near as long as the five and a half years it took to produce *Frontier*, the follow-up to *Elite*, although nothing, it seems, has been rushed or hurried. And from what we've seen of the game, *Virus 2000* shows absolutely every sign of living up to the standards of its illustrious predecessors. ng

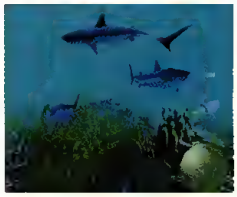






Skeletal pterodactyls inhabit the skies over the rocky mesas that form this level, and scorpions (top left) patrol the dangerous ground





The lush undersea worlds are more proof of the game's massive breadth

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Viper

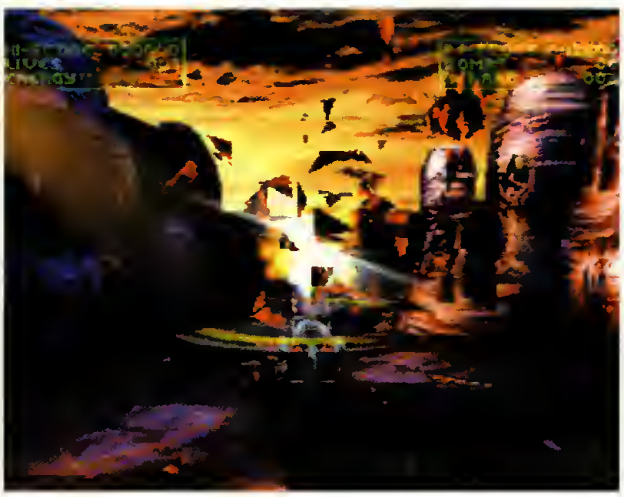
A small German developer may just eke out one promising PlayStation shooter

In the Amiga's heyday, Germany was a hotbed of prolific demo coders and innovative design teams. Today, however, France has easily overtaken its neighbor as continental Europe's premier developer. However, several talented German teams, including X-Ample Architectures, are determined to make an impression once again.

Formed by two programmers and three artists from Neon (the codeshop responsible for the flashy but flaky PlayStation shooter *Tunnel B1*), X-Ample is currently working on its first game, a shooter titled *Viper*. However, the route to fruition has been a rather tortuous one — in short, *Viper* was conceived as a section of one game, dumped, rewritten as a new game, dumped again, and then finally salvaged by X-Ample when the team broke from Neon.

"We've been through so many difficulties since the decision was made to develop this product," says X-Ample programmer Michael Bottner. "Our aim now is to finish this title and show the rest of the world that even a small team can produce revolutionary games and set new standards."

Despite this grandiose statement, a glimpse at the game does not mark it out as a particularly radical experiment. In fact, *Viper* is a futuristic on-rails shooter, not unlike *Panzer Dragoon* or *Star Fox*. For the most part, the player directs the crosshairs (while the craft

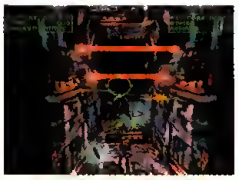


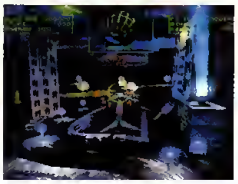




***Viper*'s diverse and detailed backgrounds seem to have benefited from the switch to on-rails gameplay**

Format:	PlayStation
Publisher:	Ocean
Developer:	X-Ample Architectures
Release Date:	Spring 1998
Origin:	Germany





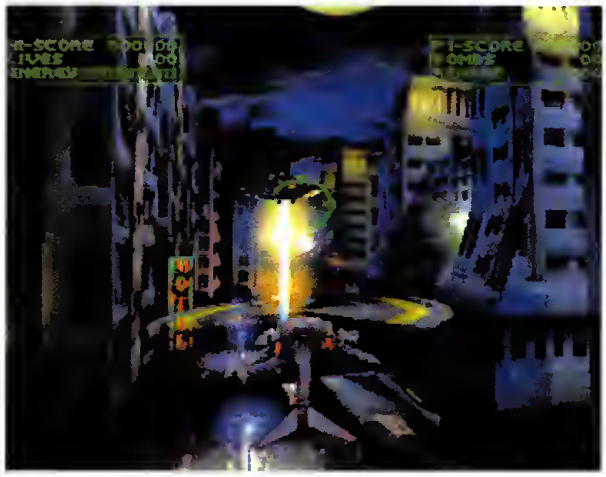
Action is enhanced by the highly atmospheric backdrops

follows), blasting anything that comes into view. And like the aforementioned shooters, the game certainly does look quite good.

On top of neon-encrusted, sci-fi metropolis environments, there are several areas, including canyons and mines, with highly distinctive and individual looks. It is clear that what X-Ample has sacrificed in terms of vehicle control, it has made up for in background diversity — an interesting but risky trade-off.

Behind all this visual finesse is P.H.I.G.S., the team's multiplatform 3D engine. Capable of drawing up to 10,000 shaded and lit polygons per frame (at 30fps), the engine can also build and animate any hierarchical skeleton model and then rotate, scale, and/or shade every joint of that model in each render frame. It's also capable of handling huge 3D worlds, morphing objects from one keyframe to another, and rendering chrome-faced 3D objects. All of this sounds impressive — at least impressive enough to prompt Ocean into using the technology in several other forthcoming titles.

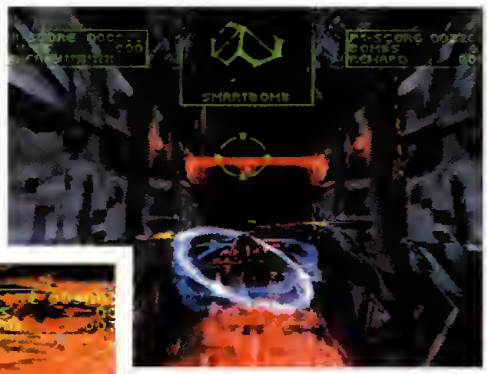
But players won't see the underlying technology, they'll see the game. Although *Star Fox 64* has proven the on-rails shooter is still a marketable concept, can X-Ample compete at the same level as NCL? Bottner is confident. "You are wrong if you think *Viper* is a simple

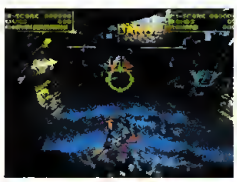


The game's City level retains the *Blade Runner* look of the original *Viper* demo, conceived three years ago as part of another project

shoot-'em-up," he says. "Each level has hidden areas and different fly-paths to choose from. As in *Panzer Dragoon Zwei*, you have to play the game several times to explore each level and find all the secrets, so the experience will be different each time you play."

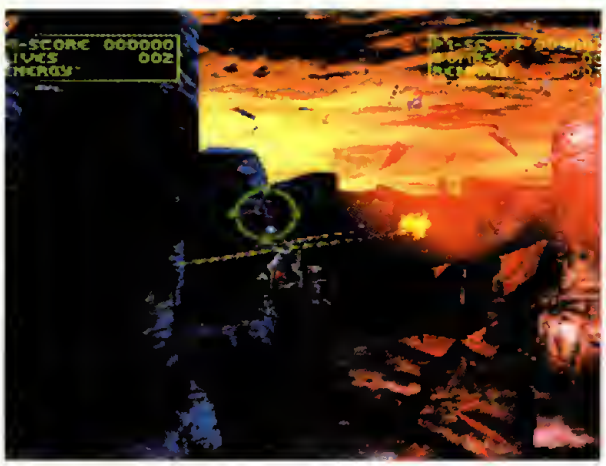
There is no doubt the team has enough finesse to make a mark, having pared down its original goals to further develop the gameplay. If X-Ample can get it right and implement the last few stages of development successfully (all of the bosses and many of the later levels are yet to be finished), this could well turn out to be the *Apocalypse Now* of videogames: a classic born out of excruciatingly difficult circumstances. As Bottner puts it, "Good games under good conditions can be written by anyone, but good games under bad conditions can only be done by the best."



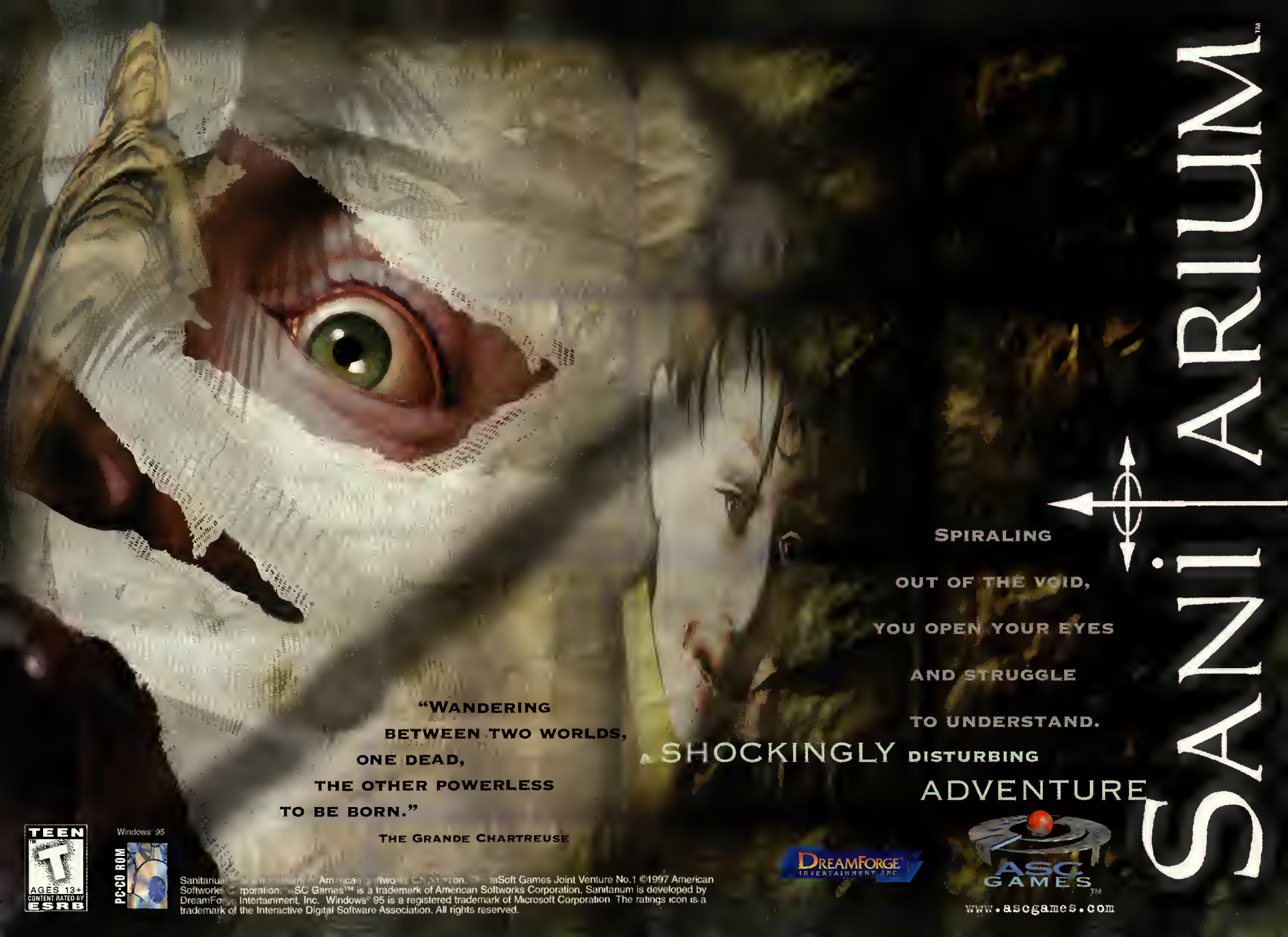




The artists are making good use of lighting and shadows



Each level promises new hidden areas and secrets to ensure a different gameplay experience every time



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Behind Enemy Lines

Proving once more that the Model 2 board is not dead, Lockheed Martin comes out blazing with an answer to *Gun Blade*

Format:	**Arcade**
Publisher:	**Sega AM2**
Developer:	**Lockheed Martin**
Release Date:	**TBA**
Origin:	**U.S.**

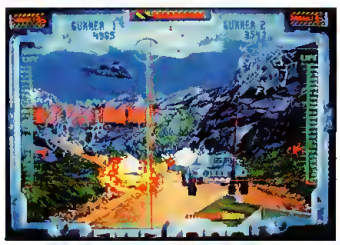


Like shooters before it, power-ups and ammo can ba found anywhere

After *House of the Dead* and *Motor Raid*, Sega is trying to prove one more time there's still life in the Model 2 board with *Behind Enemy Lines*. Developed by aerospace heavyweight Lockheed Martin (who also made *Desert Tank 2* several years ago), this combat gun game features a large gun mounted on a fixed axis, much like the one used in Sega's own *Gun Blade NY*. Players cannot move the gun freely the way they can in *Virtua Cop*, but the gameplay is basically the same, ending when the player's life gauge is empty.



Thesa Hummars are just a faw of tha many vahicias you stumbia upon throughout the game. They make excellent target practice



Positioned atop a moving tank, players are equipped with a rifle and missiles. Of course, it is possible to pick up extra items like ammo boxes, missiles, and life power-ups. Unlike *Gun Blade*'s urban setting, *Behind Enemy Lines* takes place in the rural U.S., taking the militia group scenario to the extreme. Set in 1999, players become members of an anti-terrorist task force, which must punch through a rebel uprising and eliminate it. By no means a new story, it does guarantee to generate the required high body count.

Behind Enemy Lines will offer honest 3D graphics despite the existence of some boring textures, which can be attributed to the Model 2's monochrome mapping — outdated in comparison to Model 3 mapping techniques. Subsequently, those who have experienced the Model 3 visual pizzazz of *The Lost World* will find it difficult to appreciate the effects in this game. However, the physical aspect of the game, namely the big force-feedback gun, should entice anyone who has ever dropped quarters into *Gun Blade*.



Enamias will attack from tha ground and the air. Bullet holes reflect aach playar's damaga, which is maasured by metars to the left and right



Tha dual-mounted, force-feedback guns intensify the gaming experience

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Superbikes

Can this street bike racing sim steal the crown from Delphine's *Moto Racer*?







***Superbikes'* accelerated graphics are put to the test as up to 30 bikes can be on the screen at any time during the race**

Format:	PC
Publisher:	Virgin
Developer:	Milestone
Release Date:	Q1 1998
Origin:	Italy

Following the success of *Screamer Rally*, Italian developer Milestone has decided to focus its considerable talents on translating the World Superbike Championship into a game. Although PC owners already were given the chance to enjoy *Moto Racer* last year, Milestone's coyly monikered *Superbikes* promises to again redefine gamers' expectations of the two-wheeled racing genre.

While *Screamer Rally* neglected to include an official license for its five cars (although not to its detriment), *Superbikes* features a top-notch cast of machinery from luminaries including Ducati, Honda, Suzuki, Kawasaki, and Yamaha. Thankfully, Milestone has made sure that each vehicle offers a different handling response, just as in *Screamer Rally*. Technical data from each bike's manufacturer has been incorporated into the game, which is unashamedly a simulation. Furthermore, in an attempt to attain a realistic effect, the team brought in professional motorcyclists to assess the game's handling.

In addition to the assorted machinery, *Superbikes* is also set to feature licensed riders from the Championship. While Carl Fogarty and Michael Doohan are not as familiar as the likes of Michael Schumacher, their inclusion will surely be appreciated by fans. All 12 official Championship circuits are also destined for the final version of *Superbikes* — a more than acceptable quantity, particularly when compared to Sega's *Manx TT*.

As with *Screamer Rally*, Milestone's bike racer will support the increasingly popular 3Dfx chipset. But with up to 30 opponents on a track at any time, it is difficult to see just how the software-rendered version will be able to maintain an acceptable frame rate.

Milestone has promised "fast and fluid action," something that *Screamer Rally* has in abundance. **Next Generation** has yet to see *Superbikes* running at full tilt, but first impressions are favorable.







Professional racers were brought in to ensure realistic gameplay

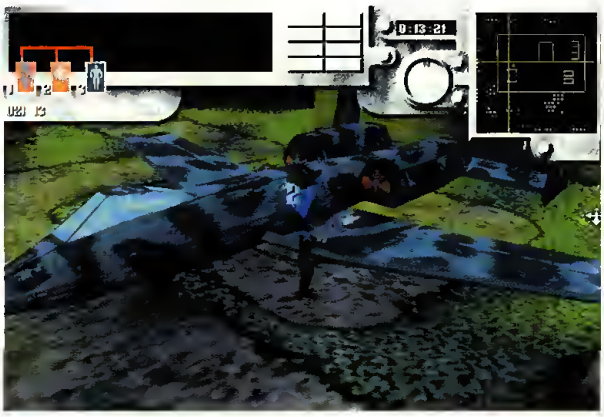
Assault Korps

What's this? A military strategy game that doesn't try to replicate *Command & Conquer*?

Format:	PC/PlayStation
Publisher:	TBA
Developer:	Corrosive
Release Date:	Q1 1998
Origin:	U.K.

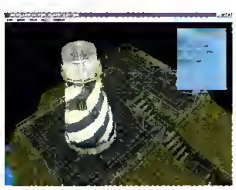


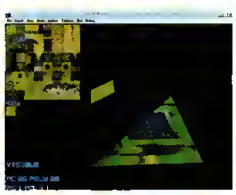
Corrosive has exploited the visual effects offered by 3D accelerator cards. Bilinear filtering keeps each level looking very smooth





The camera zooms in to view the action from dozens of angles. This overhead view (above) enables players to move tactically about the room





Proprietary tools were used to create the detailed environments

It is very rare for a game to be born entirely out of the interests of its designers. However, with *Assault Korps*, it is clear that the obsessions of the team have been of paramount importance — particularly their fixation on old war movies.

Says Jon Cartwright of Corrosive, "We've got enemy guys being blown out of guard towers with arms flailing madly, which is just classic .. action. But of course in *Assault Korps*, people and animals bleed a lot and die. No one just gets up, dusts themselves off, and walks away . ."

The plot, too, lifts ideas from every gung-ho '50s war film imaginable. The player controls a squad of commandos drafted to counter the activities of a coalition of evil dictators known as the Kern. There should be 18 missions and several multiplayer scenarios, and these can involve anything from storming citadels to protecting supply trains, all played out through locations ranging from mountain castles to city streets.

Gameplay is similarly eclectic. Up to eight commandos can be put into action at the beginning of each mission, and the player moves them around the map by clicking on individual soldiers and then clicking on where they should go, rather like *Cannon Fodder*. Meanwhile, with the other mouse button, there's a range of weapons to call upon, including an uzi, flamethrower, sniper rifle, and proximity mine — a diversity no doubt borrowed from *Doom* and its many successors.

As with the team at Id, destruction and mayhem seem to be major team



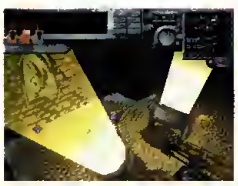


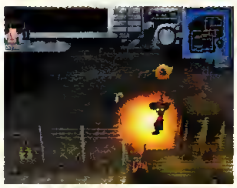


preoccupations. When an object (however big or small) explodes, it doesn't just disappear or go up in a modest explosion — doors fly off buildings, guard towers collapse to the earth, and tents rip apart, throwing the inhabitants into the air. When **Next Generation** visited the studio, one animator was working solely on sheep death animations (certain areas have flocks of them hanging about, and, when shot, they react in different ways depending on where they've been hit from). Goodness knows what they'll make of the game in censorship-happy Germany.

This intricate realism extends to enemy intelligence. Although soldiers do have a preset route to patrol, they also have eyes and ears: If they hear a noise or see a player running past, they'll investigate and give chase. The guards also have varying hearing and sight abilities, so players can't easily test and

As in *Grand Theft Auto*, players can get into any vehicle and drive it around. Take this tank (center) for a spin, or perhaps this jeep (top)









Most maps employ multiple levels and spacial lighting effects

then exploit their limitations. And if players are crawling through the shadows, they are less likely to be spotted than if they're casually strolling through a well-lit courtyard.

There are still some areas in need of polish, though. The game camera on the PC version remains too slow for modern taste, and the PlayStation port is still in its elementary stages. However, if both can provide this real-world complexity and varied gameplay together with a smooth frame rate, *Assault Korps* has a bright future. ng



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NXT

Ore Tomba

A pig-riding platform game? Yup. Strange things from a new company made up of former Capcom employees



The cartoony graphics will attract a younger audience and will inevitably draw many comparisons to Nintendo's *Yoshi's Story*

Format:	PlayStation
Publisher:	SCEA
Developer:	WhooPee Camp
Release Date:	Q2 1998
Origin:	Japan



These days, it seems as if anyone who's ever worked on a single published game can start a new development company, at least in the U.S. (The successful ones attribute it to American ingenuity, the failures usually chalk it up to not enough venture capital.) But new startups aren't limited to the U.S., nor are they limited to one-title veterans. WhooPee Camp in Osaka, Japan, is the prefect example.

WhooPee Camp was recently created by ex-Capcom developers, and more notably, Makaimura Fujiwara, who was involved in numerous big hits including *Ghost and Goblins*. The famous Super NES designer also played a major role as part of the *Resident Evil* development team. While this departure of talent is a tremendous loss for Capcom, the two companies remain close. However, it is Sony that will bring the company's first game, *Ore Tomba*, to the U.S.

Ore Tomba is about as far from *Resident Evil* as a game can get. This lighthearted, side-scrolling action game features a strange, pink-haired caveman. *Tomba*'s main objective: to get rides on pigs by jumping on them. The pigs don't intend to make this easy, though — several even have the ability to fart when Tomba is jumping on them.

The game is, by nature, the familiar platform-style adventure seen a hundred times before. The character will be able to perform traditional kinds of actions like climbing, jumping, and dashing. Yet *Tomba* will take advantage of the 32-bit hardware to add some innovation to gameplay, giving players the flexibility to pass trouble spots in different ways. The early gameplay is both enjoyable and technical, which attests to the team's experience and ability.

With heavy Japanese flavor, *Tomba* will certainly stick out in the U.S. market, and it may draw a younger audience. However, as proven by *Mario*, solid gameplay knows no cultural distinctions or age limitations. ng





A traditional anime intro paints the bizarre nature of *Tomba*'s characters



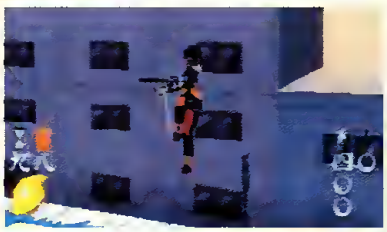


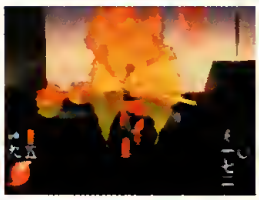
Just about anything that appears in the game can be grabbed by the player

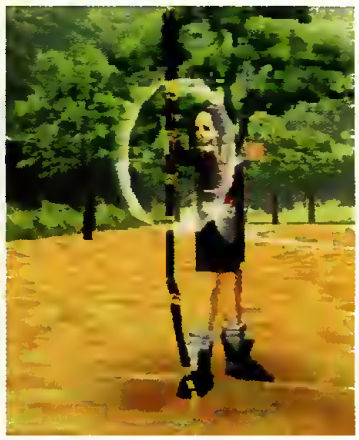
Square Soft

Having mastered everything from the shooter to the RPG, this developer proves that it's hip to be Square









***Sokaigi* sports many incredible effects and shows off Square Soft's ability to create fully interactive 3D worlds in real time**

In an industry where so much derivative software is shoveled out to consumers, seldom can a jaded gameplayer genuinely look forward to a truly new product. Fortunately for pessimists, there's Square — a company that, along with Nintendo's internal development teams, is one of few with a totally solid track record. Japan's wonder designers are not ones for rest, though, as they prepare *Bushido Blade 2* and *Sokaigi* for release later this year.

Square Soft turned heads last year when it released *Bushido Blade*, a fighting simulator that discarded the tried-and-true (and generally successful) concepts of special attacks, health meters, and time limits for the less sure world in which players could deliver fatal blows to the enemy with their first strike. It also moved the field of battle from constraining arenas to large open areas for players to freely roam. The concept worked, and now Square Soft is developing *Bushido Blade 2*, which promises even more features than the original.

The gameplay remains faithful to its predecessor, but players can run and jump with more fluidity and have a larger selection of defensive attacks. Fighting stances are much more diverse, and two-sword attacks are now possible. Finally, moves can be executed with only two buttons for horizontal and vertical strikes, giving beginners a better chance of survival.

The new environments include terraced fields, an abandoned train station, a mountain pass, a ferry platform, and even a cliff. Multitiered stages force





***Bushido Blade 2* will bring back some familiar faces from the original**



***Bushido 2* introduces a less complex system of attacks and an even greater ability to counterattack with a critical strike**





Bushido Blade 2 adds supernatural effects to the franchise, something that some consumers felt the first game should have included

players to climb walls to escape or leap into areas that can take them to an entirely new stage. The size of each stage will vary, depending on the area. Longer weapons may be a problem when fighting in certain areas, like the underground parking lot, where there is little space to maneuver.

Very similar to the 3D world of *Bushido Blade* is *Sokaigi*. Not as far into development as *Bushido 2*, *Sokaigi* will compete with Eidos' *Ninja*. The story takes place after a giant meteor crashes into Mt. Fuji, killing millions of people and opening a dimensional rift. As a result, hordes of monsters stream into Earth's dimension. Of course, it is the player's job to set things right.



Players can explore an entirely 3D world while armed with a sword and an arsenal of special attacks. Square Soft has packed in plenty of special effects, and there will be some interesting character design, including the ability of the main character to fly. The setting is more fantasy than modern, so exploration will take place more out of curiosity than necessity.

There is no definite release date for either title, but at the current rate of development, they could both make Q4 appearances. With games like *Xenogears* and *Final Fantasy Tactics* also on the roster, Square Soft may have its most successful year to date. ng





Bushido 2 will once again allow players to select their camera perspective





Sokaigi will be Square Soft's first third-person action game, stepping into a genre previously ruled by Mario and Lara Croft

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Star Ocean 2

What's there to play after *Final Fantasy VII*? Enix looks to fill the void with its first PlayStation RPG



The battle engine conforms to standard turn-based RPG fare, using a system of hit points and special attacks

Format:	PlayStation
Publisher:	TBA
Developer:	Enix
Release Date:	Q2 1998
Origin:	Japan

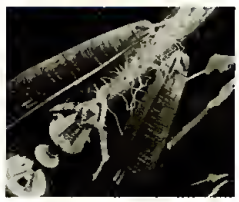
It's never easy to follow in the footsteps of a huge, highly anticipated release like *Final Fantasy VII*. Any RPG to release in the next few months will undoubtedly be anti-climactic in comparison. But after a long absence, Enix, one of Japan's prolific RPG publishers, will bring what looks like a promising RPG to PlayStation.

The original *Star Ocean* was released in Japan on Super NES several years ago, and while an honest effort, it was never given the attention that Square's RPGs received. However, Enix has redesigned the sequel for PlayStation, and perhaps even taking some cues from *Final Fantasy VII*, *Star Ocean 2* will not only offer some heroic CG sequences, but it will also feature prerendered landscapes that add a superb level of detail to the world.

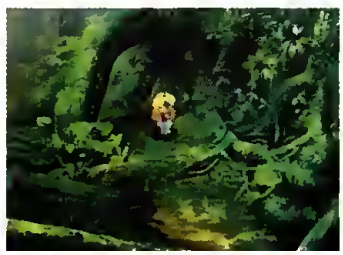
Unlike *Final Fantasy VII*'s polygonal characters, *Star Ocean 2* builds its cast in 2D sprites. Enix chose 2D sprites to get an anime style of character currently unattainable with polygonal models, and although the characters are 2D, combat takes place in a 3D arena. Little is known about the storyline, however, the scenario is said to be a complex one, as the adventure will not take place solely on Earth, but also in space.

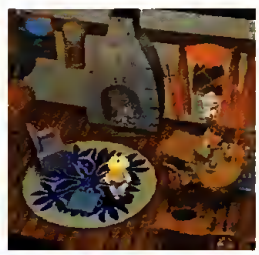
Given the less than excessive library of RPGs for PlayStation, a U.S. release for the game is a certainty. Enix's other major project, *Bust-a-Move* (**NG 37**), is a unique dancing competition game and marks a creative departure for the company. *Star Ocean 2*, however, represents the traditional side of Enix projects. It may not reach the level of popularity *Final Fantasy VII* has attained, but *Star Ocean 2* is the first RPG to hold real promise for 1998. ng

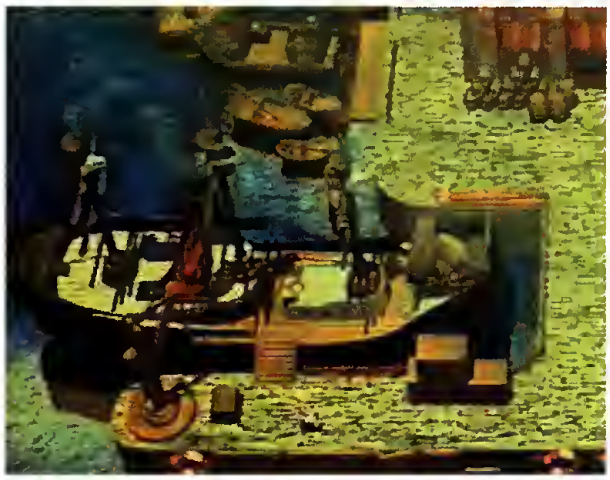




***Star Ocean 2* combines fantasy and the realm of sci-fi**







The elaborately rendered backgrounds are a far cry from those found in the game's Super NES predecessor

The way games ought to be...

In search of the future of gameplay



by **Neil West**

Neil West is **Next Generation**'s editor-at-large

Artificial Life — your questions answered

Artificial Life technology has to be one of gaming's hottest new frontiers. And following Steve Grand of CyberLife's interview in **NG 35** (if you missed it, read it at **Next Generation Online**, www.next-generation.com), I've been bombarded with letters and questions concerning Artificial Life and its potential to revolutionize gaming. I share not only the excitement of these readers, but also the worry that this is a new area of technology I know precious little about. OK, I grasp that as far as gamers are concerned, Artificial Life is a new way of creating lifelike computer-controlled characters and worlds. But what's behind it? What drives this groundbreaking technology? I want to know as badly as anyone.

From your letters, I took the five most frequently asked questions concerning A-life and gaming and set about coming up with answers. I contacted CyberLife's Steve Grand once more, and I also got in touch with Adam Frank and Andrew Stern of PF. Magic, two other proponents of Artificial Life in the gaming field and the creators of *Petz 2*. These three people all graciously accept that the price of pioneering is constantly having to answer the questions of those following behind, and they took the time to answer all of your (and my) questions.

So, class, if we're sitting comfortably ...

QUESTION 1: Please explain from the beginning. What exactly is Artificial Life?

— Jody Collins, MA

SG: Artificial Life is about generating lifelike behavior by simulating the underlying processes that give rise to that behavior in natural living things. In the scientific world it's fundamentally a new way of studying biology — experimenting with synthetic biological processes instead of trying to analyze natural ones. There are technology spin-offs, though. As a technology, A-life can mean many things, like trying to solve difficult computing problems by borrowing ideas from nature, for example. Consider a computer player who has to find the best next move in a strategy wargame. He might benefit from using an evolutionary approach — "breeding" random possible answers and employing "survival of the fittest" to hone them toward the optimal move. It sounds like a bizarre way to solve problems, but such "genetic algorithms" can quickly converge on good solutions to problems that are extremely hard to solve by normal methods.

However, for gamers (and if you'll forgive me for plugging my company), A-life can mean much more than using isolated techniques inspired by biology. At CyberLife, we're using the same broad ideas to create whole creatures — rich, complex, intelligent, and believable life-forms. We use these for many things, but the most relevant use here is for populating game worlds.

AF and AS: The traditional definition of Artificial Life has been: a system where cooperating components and modules evolve in order to adapt to a particular environment. At PF. Magic, however, we feel that this is an incomplete definition of the concept of Artificial Life. When people talk about wanting great A-life (or great AI, for that matter), what they really want is the experience of interacting with something truly alive. A convincing interactive "illusion of life" is what we're going for. We want to build virtual characters that users can form strong emotional bonds with.

> **"Such 'genetic algorithms' can quickly converge on good solutions to problems"**
>
> **Steve Grand,** CyberLife

QUESTION 2: As with Virtual Reality, I'm sure a lot of companies will jump on the A-life bandwagon, and use of the term "Artificial Life" will be abused. What constitutes "real" Artificial Life? What criteria should a game fulfill if it's to be accurately labeled an "Artificial Life" game?

— J. Peck, CA

SG: Yes, I've no doubt that it's a term worth hyping! In the past, the game industry has often used the term "AI" to mean things that no scientist would recognize as being Artificial Intelligence at all, and I expect the same will be true of A-life. It's very difficult to be definitive about what constitutes A-life. Even some of the things you see in the scientific community fall far short in my view, but who am I to say they're wrong? However, there are some broad guidelines. The key thing about real living systems — and therefore A-life also — is that their behavior is what's known as emergent. An emergent phenomenon is one that can't be tracked back to any one component in the system but only exists when all the components are working together. My mind is an emergent phenomenon produced by all the neurons in my brain. There's no little man inside my head making decisions for me, no "central controller" of any kind. A-life systems therefore have to be made from interacting populations of smaller components. If the behavior of the system is caused explicitly by rules, such as "if you see a baddie, shoot toward it," then it isn't an A-life system. For the gamer, it is hard to tell the hype from reality. I suppose all you can do is judge it by gameplay, which is, after all, the whole point.

AF and AS: We take a slightly different view. "Real" A-life should be defined as the "illusion of life." In entertainment software, all that matters is the strength of this illusion. It does *not* matter what internal techniques are used or how "sophisticated" the programming is. Lifelike virtual characters are ultimately perceived and judged through human eyes. All that matters is what you see and believe on screen. The standard to which any A-life game is held to should be this simple question. Does the audience believe the characters are alive?

So just like real living things, characters in a "real" A-life game must: be very reactive and interactive, be open to communication in some natural, lifelike way; be very expressive and able to show a broad range of emotion and desires; have strong personalities which can evolve over time, be able to learn and adapt from the user and from their environment; be able to reproduce and pass on traits of their personality, behavior, and appearance to their offspring.

QUESTION 3: Why should A-life be considered as a major new direction for gaming as a whole, as opposed to simply an interesting side street, adding novelty value to a few titles?

— Andrew Hopewell, WA

SG: Games like *Creatures* and *Petz* really focus on creating "life-forms" to play with, and though there's a lot of potential there for fascinating products, there's much more that A-life can bring to gaming. Perhaps the most significant uses of A-life are as a means to an end, not an

end in itself.

Let me explain. Computer games have not yet come of age — they're still fundamentally very stylized, caricatured, and simplified systems, not far removed from board games. As the Information Superhighway gets implemented, and advanced 3D and fancy input devices become more available, games will become what all games (even things like chess) have always aspired to be — alternative realities. Games are currently "things you play," but I believe they will increasingly become "places where you go to play," and this makes serious demands on their design. For a start, "a place to play" must be capable of allowing you to choose what you play and how you play it, rather than imposing it on you. This means that all the components of the game world have to be vastly richer and more flexible. Secondly, as rendering improves, the stultified and naive behavior of existing NPCs [Non-Player Characters] gets thrown into ever sharper relief. A white line used to be a good enough simulation of a tennis player back in the days of *Pong*, but full-blown 3D requires something more sophisticated. This is where A-life becomes indispensable.

Also, in future online games, or even advanced single-user ones, perhaps the biggest role for Artificial Life forms is as "bit-part players." Anybody who plays a multiuser game will want to be a hero, but who's going to be the street cleaner or the barman? Most players will be entering the game just to get away from such responsibilities! It will be vital for the bit-part actors in such games to be as real and believable as the avatars of the real humans, even if their role is purely ornamental. No attempt to create such richness through rule bases will be able to cope with the complexity and myriad possibilities inherent in such environments. Actually, sometimes computer characters may have to be the avatars themselves. People have to log off or shut down their games occasionally, even if only to earn the money to pay their online fees! In a multiplayer game avatars shouldn't just disappear when their owners leave, and so A-life systems may be needed to carry on the game on their owners' behalf.

AF and AS: Videogames have yet to incorporate very believable, lifelike characters. Once this finally happens, interactive entertainment will no longer be just the domain of today's "gamers." Little girls and grandmothers and 50-year-old businessmen will become interested in videogames when they can interact with engaging characters. Our industry will expand to rival movies and television as the primary source of entertainment.

With *Petz* we've already seen signs that this is possible — we are widely popular among girls and boys, kids and adults. As you know, this is almost unheard of in entertainment software. We've found that people want virtual characters that they can form emotional relationships with. Not only do they want it, but they expect it. The virtual pet craze is just the beginning.

QUESTION 4: When will A-life be able to generate NPCs that are sophisticated enough that they are indistinguishable from human players?

— Colin Mara, TX

"We've found that people want virtual characters they can form emotional relationships with"

Adam Frank and Andrew Stern, PF. Magic

SG: Some games don't require much — the baddies in *Doom*-style games, for example are pretty dumb right now (they don't speak, they're kind of meant to be stupid, and all they have to do is wander around and shoot things). Their game role is so simple that the gap between synthetic and human would be easy to fill.

But real "up-close" human-level behavior is a much bigger challenge, and the difficulties mustn't be underestimated. I can't really offer a date because it's going to be a gradual thing. I think we've shown that the approach we've taken with *Creatures* is already practical, and I'm certain that in the long run it's the only way. So, the sooner we start, the sooner we'll arrive.

AF and AS: It depends on how the NPC shows itself in the game. If the NPC is controlling tanks and armies, then it is relatively simple to pass an NPC for a human player. Today's games are already approaching this. But if the NPC shows its face on screen and you can directly communicate with it, then the problem of convincing you that it's another human being becomes much more difficult. Think about it: From the moment we are born, the first thing we recognize is a human face. We spend our entire lives with other people, interact and study each other in order to live and survive. Creating an interactive virtual character that passes for a human requires reaching a very high standard of accuracy and complexity.

When will this happen? Christmas '98 (just kidding). This is an ongoing process that is just beginning and may not be reached in our lifetimes, but PF. Magic is taking the first baby steps toward this goal. So far we have chosen animals as our virtual characters for many reasons. Real-world pets are a good choice because they are expected to behave in ways that we can successfully implement. They have only moderately complicated gestures, language, and cognitive abilities. Also, animated dogs and cats have well-established dramatic cartoon archetypes. We base the look and behavior of the *Petz* on these archetypes.

QUESTION 5: For gamers, what's the single biggest reason to be excited by A-life?

— Shuji Kawagawa, Tokyo

SG: As a gamer, I'd say it was belief. People play games because they like to suspend disbelief and feel like they're taking on a new role, a new personality, or new experiences. Suspension of disbelief is a lot easier when the synthetic creatures and people around you don't behave like cardboard cutouts!

And it's only A-life technology that will be able to deliver this richness. In terms of computer power, present-day A-life systems are inevitably less efficient than equivalent rule-based AI systems. This is because of their inherent parallelism — "if you hit a wall then turn round" is one line of code, while generating the same behavior from the interactions of a thousand simulated neurons in a neural network takes a little more effort! On the other hand, A-life provides a scalable solution. As the required level of intelligence (or other forms of adaptability such as robustness) rises, AI-style solutions tend to get explosively more complex, while A-life approaches scale more smoothly. As games get more complex, more believable, and increasingly multiplayer, the need for robust, adaptable NPCs will make heavy demands on programmers, and new techniques such as A-life will be needed.

AF and AS: The single most exciting thing about A-life is its ability to offer a convincing and interactive illusion of life. The best application of "real" A-life gives users the opportunity to develop an emotional relationship with a virtual character they perceive as truly alive. These can range from loving, caring relationships to villainous, antagonistic, competitive relationships, and everything in between. I believe that this is what people really want at this point in the development of interactive entertainment.

Want to respond?

We'll be including a "The Way Games Ought To Be" Q&A in future issues, so if you have any comments, criticisms, or questions, email Neil West at theway@next-generation.com or write The Way Games Ought To Be, Next Generation, Imagine Media, 150 North Hill Drive, Brisbane, CA 94005. Email is of course our preferred method of communication.

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JEN CHEN JOHN CHEN, JAY CHEN JOSEPH CHEN KEVIN CHEN, LYNDON CHEN, LUNG CHEN, MICHAEL CHEN MILTON CHEN, OSCAR CHEN, PETER CHEN, RICHARD CHEN RICHARD CHEN, RICHARD CHEN, SHU CHEN, STEVEN CHEN, CHRIS CHEN, CHRISTOPHER CHEN, DAVID CHEN, DAVID CHEN, DAVID CHEN, DAVID CHEN, DAVID CHEN, DAVID CHEN, DAVID CHEN, DAVID CHEN, HERNIEGA DAVID CHERNICOFF GERRIT CHERNOFF, B CHERNOWSKI JASON CHEROT, CURTIS CHERRINGTON, ASH CHERRY, DOWVEIDO CHERRY KEVIN CHERRY, PHILIP CHERRY, ROBERT CHERRY, RON CHERVY, BRETT CHERWINSKI, HOWARD CHESBORO SHANE CHESLOCK, LUKE CHESMORE, RONALD CHESNEY JAMES CHEUNG, JEFFREY CHEUNG, RAI CHEUNG, KENN CHEUNG, LEONARD CHEUNG, LUKE CHEUNG, MIKE CHEUNG, VEI CHEUNG, YI CHEUNG, MATTHEW CHEUVRONT, CHARLES CHEVALIER, DANIEL CHEVALIER, JEFFERY CHEVALLIER, ERIC CHEVALLIER, ADAM CHEVEN, DAWN CHEVOYA, CHEW NG, JEFF CHIANG, MICHELE CHIANG, SAMUEL CHIANG, STEVEN CHIANG, ROBERT CHIARPI, STEVEN CHIARA, JULIO CHIARELLA, MATTHEW CHIAVELLI, STEVE CHIAVELLI, HIROAKI CHIBA, DANIEL CHICHESTER, MATTHEW CHICK, DOUG CHICKNELL, PEI CHIEH EDWARD CHIEN, HAI CHIEN LIAN CHIEN, WEI CHIEN, CHIEN DAVID CHIEN, DAVID CHIEN, JOHN CHIEN, MICHAEL CHIEN, PETER CHIEN, STEVEN CHIEN, TIMOTHY CHIEN, TONY CHIEN, WILLIAM CHIEN, ANDREW CHIESA, JOSEPH CHIESA, JOSEPH CHIESA, JOSEPH CHIESA, IZAN CHINN MICHAEL CHINNICI, MARY CHIOBOY TONY CHIOFOLO KIRSTEN CHIOPELAS, JERRY CHIOU, RICK CHIPECO, DAN CHIPINSKY MICHAEL CHIPMAN, NOEL CHIPONGIAN, ARTHUR CHIPOURAS DENNIS CHIPPS JOHN CHIRBAN, DAVID CHIRILLO, JAKE CHIRLIN, STEPHEN CHIRSTENSEN MUTIZWA CHIRUNGA, MIHELEWSKI SHERRY CHMIELEWSKI FRANK CHMIELINSKI JIM CHMIELOWSKI, MATT CHMIELOWSKI BRIAN CHO KIT CHO KUNHO CHO SUNG CHO WDOKHYON CHO BRADT CHOATE, CARLTON CHOCK, CHIP CHOCKLEY, PARVEN CHOHAN, ALLEN CHOI CHI CHOI INHO CHOI, JIN CHOI KEVIN CHOI KEUNG CHOI HUO CHOO MIKE CHOP, GREG CHOPP, JACK CHOQUETTE, MICHAEL CHORBA, MICHAEL CHORMANIN, JENNIFER CHOROSKI BRUCE CHOU CHRISTINE CHOU, JAN CHOU, LUNG CHOU LEO CHOU MAYLEE CHOU, PAHUNG CHOU, VIRAS CHOUDHARY SAMIT 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CHUDZYNSKI, MICHAEL CHUDZYNSKI, ANDREW CHUEH, ANDREW CHUEN, ANDREW CHUEN, ANDREW CHUEN

Robotron 64 Nintendo 64 **Resident Evil 2** PlayStation **Enemy Zero** Saturn **Blade Runner** PC **One** PlayStation
X-Men vs. Street Fighter Saturn **Quake 2** PC **Micro Machines V3** PlayStation **Zork: Grand Inquisitor** PC

finals

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Next Generation's Star Guides provide a quick way to get our overall impression of a game. But unless you read the full text of the review, you're only getting half the story — after all, what's important to us might not be as important to you. To get all the information you need to know before making a purchasing decision, read the whole review; don't stop at the stars.

★★★★★ **Revolutionary**
Brilliantly conceived and flawlessly executed; a new high watermark.

★★★★ **Excellent**
A high-quality and inventive new game. Either a step forward for an existing genre or a successful attempt at creating a new one.

★★★ **Good**
A solid and competitive example of an established game style.

★★ **Average**
Perhaps competent — certainly uninspired.

★ **Bad**
Crucially flawed in design or application.

Denotes a review appearing on the Next Generation Disc.

Denotes a review of a Japanese product.

Nintendo 64

Aero Gauge
Publisher: Ascii
Developer: Locomotive

Ascii's first N64 title, *Aero Gauge*, mixes elements of *Star Fox* and *Wipeout* to come up with an interesting twist on the racing genre. Players can select from six different hover vehicles, all of which fall squarely into the *Blade Runner*/*The Fifth Element* mold, and rocket down five winding tracks, zooming through tunnels and pipes and battling a pack of seven tough opponents.

Despite its futuristic clothing, *Aero Gauge* is a pure racer without any weapons or power-ups. However, unlike the very similar *F-Zero* and *Extreme-G*, *Aero Gauge* allows you to ascend and descend on the tracks and overtake your opponents (or a second human player) from above or below. The track layout in the game reflects this, with high walls, narrow gorges, and lots of pipes and shafts that enable the player to race on the walls and ceilings.

The graphics are a mixed bag. The overall look and feel is exhilarating, with a smooth frame rate, very Japanese-looking textures, and unique courses. However, the clunky cars may not fly with fans of more realistic sci-fi design.



Although it never strays too far from the *F-Zero* mold, Ascii's *Aero Gauge* is fun enough

Considering this is developer Locomotive's first N64 project, the company managed to squeeze a lot of detail and speed out of the polygon-lazy console, although the amount of draw-in and fogging is less than impressive. There are some hidden vehicles (including an N64 controller), but not nearly enough variety overall.

In the end, *Aero Gauge* may not stand up to the speed, multiplayer action, and track diversity of the upcoming *F-Zero X* (or for that matter, *Extreme-G*), but considering that it beats Nintendo's cyber-racer to the punch by more than six months, this should help tide over racing fans nicely.

Rating: ★★★

Robotron 64
Publisher: Crave Entertainment
Developer: Player 1

Following in the footsteps of Midway's *Robotron X* for PlayStation, the 64-bit upgrade to Atari's classic turns out to be the most playable version this side of the original *Robotron 2084*. Developed by Player 1 and picked up for distribution by Crave Entertainment after Midway dropped its publishing plans for the title, *Robotron 64* mainly succeeds by sticking close to its roots.

Gameplay is virtually identical to the original. Placed on a square, texture-mapped platform, players try to survive wave after wave of mindless robots while occasionally saving an equally mindless human family from getting zapped. Mostly played from an overhead perspective, *Robotron 64* presents itself in functional, if ineffectual polygonal form, fixing the awkward, view-obstructing camera angles of the PlayStation version. This time around, players can actually see the hordes of robots coming from all directions, just like in the original.



***Robotron 64* is an improvement over *Robotron X* for PSX, but the original still beats 'em both**

But where the game really sets itself apart from the so-so PlayStation conversion is in the control department. Forget the standard control scheme where you move with the analog stick and shoot with the yellow C-buttons — *Robotron 64* needs two controllers to work. Holding one N64 controller by the center prong in each hand, players steer the character's direction with the left thumb, while they fire in with the right. This setup remains faithful to the original's control scheme while enjoying the benefit of being fully analog.

Add to that new bosses and power-ups, hundreds of levels, and a decent nonstop techno soundtrack, and this tiny 4MB cart stands as proof that size isn't everything — it's what you do with it that counts. It still may not improve on the original, but it's much better than expected.

Rating: ★★★

Wayne Gretzky's 3D Hockey '98
Publisher: Midway
Developer: Midway

Last year's *Wayne Gretzky's 3D Hockey* for N64 was far from a perfect hockey title, but it had charm, speed, and a sense of fun, and that made it a success. For this year, though, Midway shamelessly recycled the original game and slapped '98 on the title. The result: *Wayne Gretzky's 3D Hockey '98*.

On the surface, nothing was changed. Every texture map, sound effect, and voice sample from last year is back, and it takes an extremely keen eye to spot any differences. In fact, when comparing both versions side-by-side, we often lost track of which game was being played on which system. They're that similar.



This is *Wayne Gretzky's Hockey '98*. No, wait, it's *Gretzky '97*. No, wait ... Aw, never mind ...

Because simulation mode is the default selection, it's obvious that Midway wanted this to be the focus in the '98 version. But the effort to make this a true hockey title just wasn't put

into this game. The developers simply took everything that was in last year's title, made the goalie infallible, and called it the next season's update. And don't expect accuracy, either — many team jerseys are incorrect, there's no delayed penalties, two-line passes are allowed, pucks never leave the arena, and the list goes on. The AI, which was supposed to be an improvement over last year, is still dumb as a post, with teammates going offsides as if drawn there by a big skate magnet. Not to mention the multitude of icing calls caused by the gravity defying puck. At least the game keeps track of individual player statistics, something the original game lacked.

In the game's favor, *Gretzky '98* features the intense arcade modes of last year. It was a highlight that made the game the equivalent of *NBA Jam* on ice. It was pure, mindless fun, and while it's harder to score in arcade mode this year, it's still mindless fun. It's almost ironic that you have to strip out all the real-world rules to make *Wayne Gretzky* fun to play. But last year's hit is this year's deja vu — don't be sucked in by Midway's hype. If you own the original, there's nothing in the update that justifies a purchase.

Rating: ★★

PlayStation

Auto Destruct

Publisher: Electronic Arts
Developer: Neurostone

A mission-based combat racing game, *Auto Destruct*'s gameplay is centered around the story of a championship race car driver who seeks vengeance for the death of his wife and daughter at the hands of a fanatical cult called the Disciples of Lazarus. Of course, picking up an uzi and heading down to cult headquarters would never do, so a mysterious organization has stepped in and provided the hero with a heavily armed sports car with which he can wreak havoc on the city streets.

Ludicrous storyline aside, *Auto Destruct* is all about driving really fast and blowing up evil cult members with little regard for innocent civilian traffic or pedestrians. The game has a definite *Carmageddon* and *Twisted Metal*-like flavor to it, but its nice variety of missions, including seek-and-destroy, escort-and-protection, and pick-and-delivery, keep the game from seeming too derivative. Resource-management elements like monitoring, purchasing, and replenishing weapons, armor, fuel, and ammunition add a nice strategic touch.

However, what really separates *Auto Destruct* from being just another undistinguished action game is its fully realized 3D city environments. Some liberties have been taken in re-creating cities like San Francisco, London, and New York, but the amount of detail and the expansive nature of the environments are truly impressive. Although there is ultimately a city limit that cannot be ventured beyond, players will appreciate the freedom to determine just which route to take when fulfilling mission objectives. Some buildings in the city even allow the player to smash through entrances and navigate their interiors.

Considering its superior environments and adequate gameplay, the only factors that prevent *Auto Destruct* from being truly excellent are some technical shortcomings. The graphics in particular lean more towards first generation PlayStation than some of the eye candy that has recently graced the system. Problems like inconsistent collision detection and chronic draw-in, combined with unattractive textures, flat colors, and an overall grainy appearance, give the game an air of being rushed, or simply shoddily executed. Generic music and sound effects do nothing to change this impression.

At its core, *Auto Destruct* has a concept that could have been something really special. The idea of running around a huge environment interacting with everyone and everything really has limitless gameplay possibilities. Even discounting its technical shortcomings, not enough innovation or care was exercised in the game's development to bring what could have been an excellent game structure to fruition. *Auto Destruct* is a good ride, but it could have been much more.

Rating: ★★★

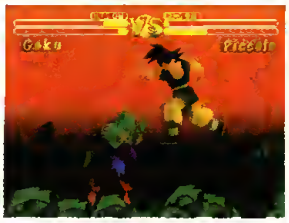


The huge city environments in *Auto Destruct* are extraordinary and easily the game's best attribute

Dragon Ball GT Final Bout

Publisher: Bandai
Developer: Bandai

At some point during the development cycle of *Dragon Ball GT Final Bout*, someone should have said, "No." Bandai Japan should've stopped it from being released there. Bandai US should've stopped it from being brought over. Sony should've never approved it. Why? Because it is inarguably the worst PlayStation fighting game ever made.



***Dragon Ball GT Final Bout* is simply the worst PlayStation fighting game ever made**

Once again, Bandai, which is not exactly known for rigorous quality control, brings us a lackluster 3D brawler based loosely on the anime series *Dragon Ball*. *Final Bout* takes the wonderful characters from the series and turns them into stiff, blocky polygons with only a hint of resemblance to their animated counterparts. This, however, is just the beginning of *Dragon Ball GT*'s problems.

Control is almost nonexistent. The characters jerk and flop about like mannequins in a wind tunnel and only occasionally seem to respond to any specific controller sequence. The reaction time is so slow, players could walk away, make a sandwich, and watch all of *Shogun* before the intended punch connects. The characters' "flying" is laughable. Sure, they're in the air, but they remain in their usual standing position.

The camera seems to have been set up in order to obscure as much of the game as possible. When fighters are punched back, the camera jerks with them — there's no such thing as panning in *Dragon Ball GT Final Bout*. And, when characters fly up out of camera shot of

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What Do These Games Have In Common?

PlayStation

Raising the dead

Capcom's monster sequel ups the ante on perfection



A new array of powerful weapons in the game shows off the fancy light-sourcing — Capcom has gone to great lengths to pack in more end more end more of whet mede the original great



Resident Evil 2

Publisher: **Capcom**
Developer: **Capcom**

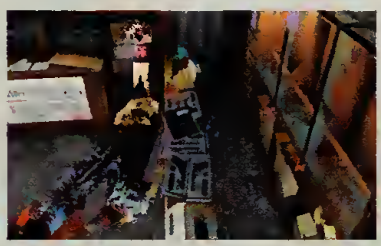
Following a long trail of countless delays and whispered rumors of a company in trouble, Capcom's masterpiece sequel to 1996's groundbreaking 3D adventure, *Resident Evil*, has finally made the journey from the object of gamer fantasy to the reality of the small screen. And the result goes beyond all expectations to produce one of the most impressive games yet in the PlayStation library of classics. While some of the features within the game have been carried over from the original, Capcom has ensured that the graphics, controls, and gameplay have gone the distance to provide gamers with an all-new experience.

From the outset, the game has been expanded into a two-disc set, with each of the two playable characters ascribed one entire disc for their separate adventures. While the option to play as one of two different characters whose journeys distinctly vary is something that was available in the original game, this time around, the game is much more massive in depth and length. The differences between each character's adventure are also much greater, thereby improving the replay value tenfold for the meticulous gamer. A more technical improvement that's noticeable in *RE2* is the vast leap in graphics that Capcom has engineered to lessen the gap between the gorgeous prerendered backgrounds and the highly detailed polygonal characters. Environments are much more interactive and the characters appear less conspicuous and disparate from their backgrounds. It's not only a major move ahead from the original game, but it's a step beyond the competition. With the greater amount of interactivity characters have with the flawlessly prerendered landscape, *RE2* far surpasses the occasional choppiness of *Tomb Raider II*'s graphics and even gives *Final Fantasy VII* a run for its prerendered money. This aspect greatly improves the original games' depth. The characters' ability to search corpses for ammunition and other items or examine desks and drawers for files and paperwork grants the gamer a deep sense of gameplaying freedom. Coupled with the stunning graphics, the game's world comes alive in a way the original could never quite accomplish.

One single massive adventure isn't the only thing that spans the length of each disc. Capcom has also included a varied "secondary" adventure for gamers who save their completed game to a memory card and attempt to play through *RE2* again. The game will be scrambled with different routes to travel, a varied assortment of enemies, and different items and cinemas.

But even with these and other countless improvements and new features packed into *Resident Evil 2*, Capcom hasn't neglected the real reason that gamers were drawn into the original game, which is the need to be entertained and the thrill of being scared out of our wits. With a spooky yet stellar soundtrack including the most precise and realistic sound effects ever heard in any game, *RE2* ensures numerous nervous nights spent with all the lights on and a controller in hand. Kudos to Capcom for undoubtedly making the must-own title of the year.

Rating: ★★★★★



A high level of character detail mekes the action more intense for pleyers, end the game story varies with each character, edding high repley for die-hard fens

the opponent, there's no pointer to tell you where they are, as in *Marvel Super Heroes*. The result is a baffling and frustrating experience.

Dragon Ball GT Final Bout is a deplorable waste of disc space. If there's any justice in this world, the people responsible for bringing this out will be kept up at night with the cries of disappointed *Dragon Ball* owners resounding in their heads.

Rating: ★

Lode Runner

Publisher: **Natsume**
Developer: **Presage**

Lode Runner is a classic game, no bones about it. The game has gone through numerous permutations, including the 1994 releases of *Lode Runner: The Legend Returns* and *Lode Runner Extra* for the Mac and PC, which only slightly altered the traditional gameplay. Now both of these games have been ported to PlayStation as *Lode Runner*, and while the gameplay is as solid as ever, the PlayStation version adds little that's new.

The aim of the game is simple. Run around a 2D screen full of ladders and platforms, collecting coins and avoiding bad guys. Despite that premise, the game is more puzzle-oriented than one might expect — figuring out a route through each level is the main requirement, not hand-to-eye coordination.

Control of the game has translated well to PlayStation, with the D-pad seemingly designed for games like this. The mindless AI of the mad monks, crucial to the puzzle nature of the game, may seem dated to some players, though.

The best part of the original *Lode Runner* was the level editor (indeed it was the first game to have one), and thankfully *Lode Runner* for PlayStation is no different. All of the elements are here to create your own levels. However, even the level editor seems clunky compared to



Lode Runner is nostalgic gameplay at its most basic, but it's still fun

modern ones.

Yes, *Lode Runner* is a classic game and deserves to be seen and enjoyed. But if you've already played it countless times before, this re-release won't give you anything new. If you haven't, though, this action-puzzler is well worth a look.

Rating: ★★★

Micro Machines V3

Publisher: Midway
Developer: Codemasters

There's no denying the greatness of the first two *Micro Machines* games (the series came in at number 18 in our Top 100, **NG 21**). Thankfully, Codemasters hasn't monkeyed around with the winning formula much, adding just enough to justify its presence on a 32-bit system.

The game is still relatively the same. Drive toy vehicles around top-down tracks built from things like cereal on a breakfast table or stones in the backyard. The cool thing about *Micro Machines* is that the vehicles handle as toys would. They're very fast and loose, but easy to control. Also, each vehicle type handles differently. The speed boats steer from the back, for example, while the tanks are more solid.

The tracks themselves are nothing short of brilliant. Generally constructed like a child's play area, the tracks are humorous and imaginative while at the same time quite a challenge. The courses get narrow in certain areas and often put players right next to the edge of a table or other harrowing precipice. The tracks are peppered with power-ups that make the race all the more interesting. Other tracks have their own hazards, like Chemical Warfare, a race set across a Periodic Table of Elements strewn with pools of acid that turn the cars into spinning fireballs.

It's the multiplayer mode, though, that really sets *Micro Machines V3* apart from other racers. The object here is to win the race, of course, but there's a point scheme involved. Every time a racer falls behind the scope of the screen, a point is lost. It's great fun, and it's reason enough to give *Micro Machines* a look.

Micro Machines V3 may not be the next *Formula 1*, but it is brilliant in its own right. One of the few truly great multiplayer PlayStation games.

Rating: ★★★★

Nagano Winter Olympics 98

Publisher: Konami
Developer: Konami

Konami continues its long sports tradition with *Nagano Winter Olympics 98* — and does a decent job of upholding the tradition. In *Nagano*, the player competes in 13 winter sports, from alpine skiing to more obscure events like curling. Each sport re-creates the courses and conditions of the Olympic Games that were held in Japan this month.

The sports best represented are bobsledding, luge, and, um, curling. Bobsledding and the luge both have a great sense of speed and good control, and they are fun to compete in. Curling is not unlike shuffleboard on ice (it's big in Canada, OK?). One team member pushes a sliding puck as two more sweep a path before it to influence its direction. As silly a sport as this may seem, curling is actually the most challenging event on the disc and the most fun to master.

Strangely, the better-known and more popular sports — skiing and skating — aren't nearly as well-realized. You can affect the direction the athlete is going but never feel truly in control, especially during the skating events, which almost operate on autopilot.

Nagano Winter Olympics is a mixed bag. The graphics and sounds are great, and about half of the events are dead on, but the rest rarely rise above mediocrity. All multi-event discs have clunkers, though, and the fun delivered by the other events makes this game worth a look in the end.

Rating: ★★★

One

Publisher: ASC Games
Developer: ACS Games/Visual Concepts

When first shown at E3, ASC Games' *One* appeared to be the first sure hit for the company. From the demo, it looked as if it had everything: big explosions, great graphics, and a cool premise. As it turns out, it has all that but is missing one key element: gameplay.

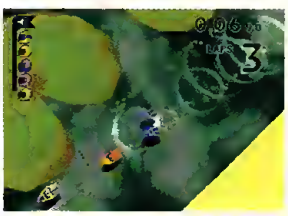
John Cain awakens on the floor of an apartment somewhere within a giant, unnamed metropolis with no memory and a huge gun in place of his left arm. Thus begins the 3D action/shooter *One*, ASC Games' first real bid for the big time. The sci-fi theme of the premise is enhanced by the game's *Blade Runner*-like presentation, full of skyscrapers and neon signs. The game does indeed look great, with some pretty spectacular lighting effects and screen-encompassing explosions. Don't be fooled, though, as the graphics in *One* are about the only things that are spectacular.

For starters, *One* is just way too demanding. Even with the difficulty set on "easy," *One* throws so much at the player it's difficult to tell what's going on. To make matters worse, the entire screen shakes whenever anything big blows up (which is often). While this does give the game an action-packed, movielike feel, it also makes it difficult to figure out exactly what's happening with the character much of the time. Throw in some screen-filling explosions and it becomes nearly impossible to even see, let alone navigate treacherous, narrow platforms.

Which brings us to the issue of control. While it's not completely terrible, the control configuration in *One* would have worked better in a flat-plane shooter like *Robotron*, not one that requires precise 3D platform jumping. Too often, an apparently simple jump, through either perspective or shifting viewpoint, simply winds up with the character plummeting to his doom. To compound this, save spots have been set few and far between. Frustrating, to say the least.

One had a lot of promise. If only ASC could've gotten the graphics and the control in sync. But then that's the trick, isn't it?

Rating: ★★



***Micro Machines V3* stays true to the 16-bit game blueprint, but improves on things like graphics**



Strangely enough, the luge is one of the more exciting sports in *Nagano Winter Olympics*



It may look good, but ASC's *One* has some fundamental flaws that keep it from greatness

They're Missing Something.





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rating

Saturn

A sound idea

Warp's Laura returns in one of the most unique graphic adventures in years



It's amazing Sega got away with a Teen rating with all this blood



Enemy Zero

Publisher: Sega
Developer: Warp

When Sega announced it was translating *Enemy Zero* to the American Saturn, the company took quite a risk, using an FMV game to bolster a sagging first-party library. The bet paid off, though, because *Enemy Zero*, a graphic adventure with some odd twists, engages on both aesthetic and gameplay levels.

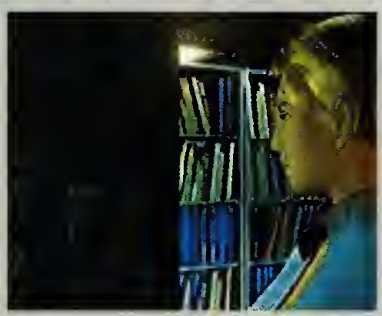
An FMV game is all about story and mood. Warp's iconoclastic president, Kenji Eno, has taken his love of moody design and audio and used them well. Suspense and tension oozes from the walls of space station Aki, without seeming too derivative of the *Alien* movies. What it lacks in *Riven*'s flamboyant architecture, it makes up for in fine cinematography and sound design.

In another departure from *Riven*, puzzles are logically designed, not contrived. Clues and items make sense in the context of the game instead of being arbitrarily placed mysteries. And Aki feels like a space station, not some island conceived out of some haphazard and arbitrary imagination.

The most exciting part of *Enemy Zero* is in its sound production. The only way the game's protagonist Laura (whom Warp fans will remember from *D*, although this is a vastly different game universe and has nothing to do with the developer's previous foray into gothic horror — go figure) can track the ravenous aliens through an audio motion detector. Listening to radar pings get closer and closer, and waiting for the alien's roar before firing are nerve-wracking. It's almost worse, in its way, than hearing the creeping approach of the zombies in *Resident Evil* since in *Enemy Zero*, death has no visible presence whatsoever.

Not only is *Enemy Zero* a fine adventure, but it also manages to advance the graphic adventure by emphasizing other senses besides pure sight. It may still have some of the faults of FMV-plagued games, but those problems dwindle to nothing compared to the overall experience.

Rating: ★★★★



Smart camera work has always been a Warp trademark, and *Enemy Zero* is no exception

X-Men vs. Street Fighter

Publisher: Capcom
Developer: Capcom

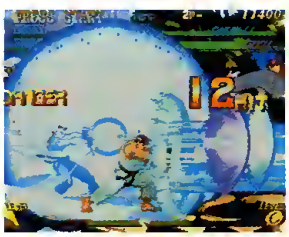
In the grand scheme of things in the twilight of Saturn's existence, Capcom's amazing arcade translation of *X-Men vs Street Fighter* will not be remembered for its flawless programming but instead for the hardware that made it possible. It's the first game to use Sega's new 4MB RAM cart, and its performance is perfect proof that RAM is ultimately the most important component in console gaming.

Capcom's latest 2D fighter is essentially the *Marvel Super Heroes* graphics and fighting system taken to extremes. Players are treated to a smorgasbord of characters from two universes, game backgrounds span two full screens, and there are more frames of animation than previously possible. In comparison, *Marvel Super Heroes*, on the 2-3MB Saturn, loaded slowly, played slower, and generally behaved like a pupating maggot on frozen beef.

Add in a 4MB RAM cart, however, and the Saturn's capabilities increase an order of magnitude. In spite of having twice as many animation frames as *MSH*, *X-Men vs. Street Fighter* loads faster, and slow-down has been all but eliminated. Animation is beautifully fluid, even when the maximum of four characters are on screen.

In making more space for the data to be loaded, Capcom improved the performance without discomfort. If nothing else, *X-Men vs. Street Fighter* proves the old adage, "more is better." If 6MB can do this much for Saturn, the next generation of game consoles will be a wonderment to behold.

Rating: ★★★★



As hokey as the premise is, *X-Men vs. Street Fighter* shows what a little extra RAM can do for Saturn



***Andretti Racing* combines good looks with exciting racing**

Andretti Racing
Publisher: Electronic Arts
Developer: EA Sports

It seems as if everyone and his grandmother is putting out a racing game for the PC these days. It's getting more and more difficult to stand out from the crowd too, with the high-powered PCs on most gamers' desks adding a visual beauty that was unheard of just a few years ago.

Andretti Racing for the PC hopes to catch the public's attention by offering two different brands of racing in one package. Both Stock and Indy cars are available to race with on 16 tracks. Four of the tracks are authentic while the remaining 12 were created for the game.

Players can choose to hop right on the road in exhibition mode, or begin a 10-race season in either circuit by starting a career. If you're successful enough, other sponsors will be clamoring for you to join their team for the next season.

Before each race players can make adjustments to their vehicle to match the track conditions. On the track, the racing is fast, with a fairly realistic physics model that gives a different feel between the two circuits. The car and track graphics are nicely detailed (especially with a 3D accelerator) and fully adjustable, but the backgrounds are a bit blurry and there is a lot of draw-in. The AI of the computer-controlled vehicles is challenging.

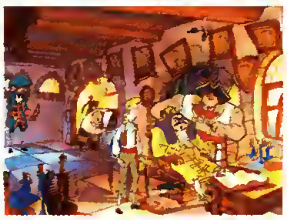
If you're looking for strict realism, stick with the Papyrus line of racers. Otherwise, *Andretti Racing* is a well-designed, extremely fun racing game that skirts the line between arcade and sim.

Rating: ★★★★

The Curse of Monkey Island
Publisher: LucasArts
Developer: LucasArts

After a five-year hiatus, the *Monkey Island* series returns with its third installment. But it seems the development team (with the notable absence of original creator Ron Gilbert) decided that more of the same would be good enough. The only token effort to advance the time-honored, point-and-click gameplay involves several quasi-action sequences, although at least these are seamless and don't jar the player's attention.

The game's main appeal, then, is its extremely attractive facade. A great deal of effort has gone into the top-notch production values — sound, music, art, voice acting, animation — that are synonymous with the LucasArts brand. It showcases the usual fine attention to detail and continues the emphasis on creating a world that is integral to the storyline.



***Curse of Monkey Island* is a by-the-numbers graphic adventure, but at least it's easy on the eyes**

All this surface flash doesn't mean anything in the end, however, if the story and puzzles aren't up to par, and unfortunately, this is where the game falters — it doesn't fall exactly, but it falters. After the initial sensory rush, the less-than-inspired (and occasionally maddening) puzzle design slows the pace to a crawl, and the lack of a strong narrative pull belies the gorgeous exterior.

Humor has always been the driving element behind the *Monkey Island* games, and *Curse* doesn't drop the ball in this regard. However, the increasing number of pop culture references sprinkled throughout adds a postmodern flavor that many times just doesn't fit well and ends up jolting the player from the meticulously constructed atmosphere that is the series' greatest strength.

At the end of the day, however, despite its flaws, *Curse*, like its two predecessors, is still just fun enough to remain a satisfying experience. The *Monkey Island* games are massively popular for a reason: People enjoy playing them. So it's hard to find too much fault with LucasArts for epitomizing the axiom, "If it ain't broke, don't fix it."

Rating: ★★★

F1 Racing Simulation
Publisher: Ubi Soft Entertainment
Developer: Ubi Soft Entertainment

Considering the market dominance of Psygnosis' and Papyrus' series in the open-wheeled racing genre, it's a little surprising that Ubi Soft would field an entry to compete against the perennial favorites. What comes as even more of a surprise is that Ubi Soft's game compares rather favorably with the heavyweights.

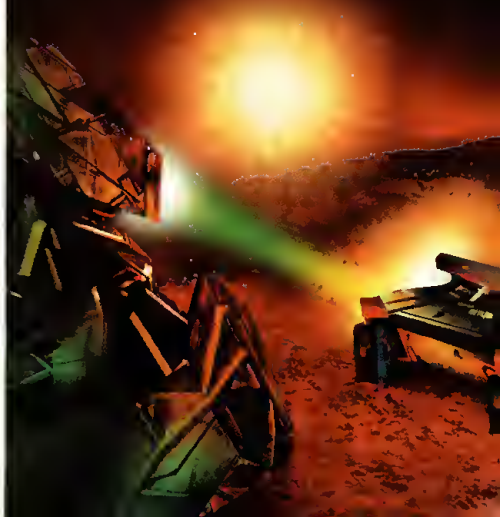
Graphically, *F1 Racing Simulation* is arguably more attractive than Psygnosis' title, and that's no small feat. The cars are superbly modeled, and the tracks and background environments are really top-notch. Overall, the entire visual experience is superb, the game animation is admirably fast and smooth. Even with the screen filled with racing opponents, there was no noticeable reduction in the frame rate on a Pentium II system. Lower-end systems exhibited some choppiness in the same situation, but never enough to adversely affect gameplay. Of course, it should be noted that the game boasts superb graphics because a 3D accelerator card is mandatory (fast becoming an industry standard). The only irritating thing about the graphics is the developer's love affair with lens flare effects — quickly becoming the

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rating

PC

Out of retirement

Finally, a movie-licensed videogame with a heart and soul of its very own



The beautifully prerendered backgrounds live up to the example set in the movie



The bit-mapped characters stand in stark contrast to today's more fully developed 3D game characters

Blade Runner

Publisher: Virgin
Developer: Westwood Studios

Few movie licenses age as well as Ridley Scott's science fiction classic *Blade Runner*. And for once, a game developer has shown an important license the respect it deserves with a quality game. From the faithful re-creations of the movie sets to the care taken with storyline and character development, *Blade Runner* does more to build on the movie's good name than it does to diminish it, as most licensed games tend to do. Two years in development, *Blade Runner* not only enables the player to relive some of the magic created in the movie, but it actually enables the player to step into the action in a meaningful way.

The game achieves this elusive goal in a number of ways, not the least of which is through thoughtful and convincing dialogue and voice acting. As in most adventure games, *Blade Runner* still controls most of the dialogue, and the player sometimes feels "along for the ride," but the developers have found other ways in which to offer the player control. The player is able, for example, to stop and question people in the streets, interact with other blade runners, administer the infamous Esper test to suspected replicants, explore the complex environments of futuristic L.A., put together important clues from crime scene investigations, and, of course, hunt down and exterminate Nexus 6 replicants — the game's main objective.



Interaction between the characters is convincing due to quality voice acting

Perhaps most impressive of all is what the developers are calling their "realtime" gameplay. This doesn't mean the 3D backgrounds are generated in real time but that the story itself unfolds in real time. Things happen without the player being around, and they affect the course of the story. In addition, the plot itself takes different twists every time it's played. Together, this means unusual longevity and replay value for a graphic adventure.

But *Blade Runner* isn't perfect, and it falls short of the mark at times. One readily apparent annoyance is the use of bit-mapped, prerendered characters, which tend to pixelate into a hazy mess at times. A clear sign of the available technology at the time the project was started, it's sometimes hard to believe this is a current release. Suspension of disbelief really requires high-resolution graphics these days. The game also suffers from traditional adventure game pitfalls like the sometimes tediously slow pace of the action and the limited interaction with the backgrounds (this is yet another graphic adventure that reduces the player to "trolling" over static backgrounds, just looking for something to light up under the cursor).

In all, though, the game's shortcomings seem irrelevant as the journey that Ridley Scott and Harrison Ford began 15 years ago is brought to an entirely new end at the player's command. All movie-licensed game publishers should take note.

Rating: ★★★★



F1 Racing Simulation sports beautiful graphics but requires 3D acceleration for entrance

most overused effect in all of gaming, it is a notable annoyance here.

In terms of gameplay, *F1 Racing Simulation* also compares favorably with the best of the genre. There are 22 real-life drivers and 16 actual Formula 1 tracks, and the game can be set up as an arcadelike experience, which still retains some realistic elements, or as an ultra realistic simulation. As is par for the course, the game also features different weather conditions, and cars can experience performance-inhibiting damage during races. Despite an above average computer AI, there's nothing groundbreaking here. Everything works just the way the player would want and expect. A nice touch is the game's detailed instruction booklet, which actually explains how the different mechanical adjustments affect the race car, making the simulation elements of the game more accessible to novices.

The only area in which the game suffers in comparison to *Formula 1 Championship Edition* is that the FOCA license obtained for the game is for the 1996 season and thus features the drivers and tracks from two years ago. For die-hard racing enthusiasts this is an important point, but for the more casual gamer, rest assured that the graphics and gameplay elements of *F1 Racing Simulation* more than make up for this lapse.

Rating: ★★★★

Heavy Gear

Publisher: Activision
Developer: Activision

For the past three years, Activision has ruled the giant robot game world with its fantastic *MechWarrior 2* games. After FASA rescinded the license, Activision scrambled to find a replacement universe to fit its amazing mech engine and came up with Dream Pod 9's *Heavy Gear* universe, an up-and-coming star in the paper-and-pen RPG market. The result is *Heavy Gear*, a definite improvement over *MechWarrior*, but a mixed blessing overall.

At first glance, everything about *Heavy Gear*, from its mission interface to its infrared vision display just screams *MechWarrior 2*. Veteran players can jump right in with no transition pains whatsoever. The addition of Tour of Duty mode is a more evolved version of *MechWarrior Mercenaries*' Instant Action option, except that it provides a more realistic form of promotions.

The new Gears sport a number of improvements over the original system. In general, Gears move much more quickly over smooth terrain while their smaller size seem to make them especially nimble — players can duck, sidestep, and pick up weapons.



***Heavy Gear* looks extremely polished and plays well, but is fairly shallow as mech games go**

Unfortunately, the *Heavy Gear* universe is limited in comparison to that of *MechWarrior*. The entire course of the single-player campaign is confined to a small segment of a thin, thin equatorial frontier. That means every mission takes place in the desert, on the mountains, or in small brown brush. Also, if the mission areas themselves don't look different enough, it doesn't help at all that Gears are gray and based off standardized designs with little variation.

In creating *Heavy Gear*, Activision has a different universe and a better engine but a roughly designed game. *MechWarrior 2* still holds the edge with flamboyant mech designs and a sweeping storyline. Hopefully, since the *Heavy Gear* universe is both an RPG and tactical simulator, Dream Pod 9 will be able to design a more satisfying premise for the sequel.

Rating: ★★★

The Isle of Four Winds: Rune War

Publisher: Arcanium Productions
Developer: Arcanium Productions

The Isle of Four Winds: Rune War is perhaps one of the most elaborate Mahjong computer games ever created, combining the classic Eastern tile game with a strategy element similar to Risk. In Mahjong, the player uses playing card like tiles to create runs — pairs or three or four of a kind — to win the game. Mastering Mahjong is a challenge for players of any skill level, and there are dozens of computer games, like the classic *Shanghai*, that offer an exceptional playing experience. However, *Rune War* differentiates itself from the crowd first by offering multiplayer support for up to four human players, and second by including a strategy mode.

In strategy mode, the player uses each hand of Mahjong to summon familiars to do combat on a Risk-like map, build magic points, or cast spells on opponents' familiars, with territorial domination as the final objective. While the strategy element is an interesting addition, it doesn't significantly add to the classic and wonderful gameplay of traditional Mahjong.



***Rune Wer* is Mehjong with e hand-painted fantesy look end e strategy game twist**

For gamers who've never played Mahjong, *Rune War* offers an excellent tutorial and is a good introduction to the game. Mahjong players looking for a new challenge may enjoy the strategy aspect but will probably find the game's well-implemented multiplayer support the most intriguing feature.

Rating: ★★★

Zork: Grand Inquisitor

Publisher: Activision
Developer: Activision

Zork: Grand Inquisitor revisits the Great Underground Empire (first discovered in one of the earliest computer games ever created — *Zork*) in an adventure that's as funny as it is beautiful. Using the same Z-vision engine as last year's *Zork Nemesis*, this latest installment has many improvements over the previous game — namely the ability to collect items and cast spells, the addition of more logical and integrated puzzles over *Nemesis*'s *Myst*-like nonsense, and a return to classic Infocom-style humor.

At just about any point, players can spin around in 360 degrees, and they can sometimes look up or down. The goal is to overthrow the Grand Inquisitor, an intensely incompetent leader who has outlawed any use of magic within the reaches of the Empire.

The game contains plenty of FMV, but its use has been toned down since the last *Zork*. Mostly, it functions to move the plotline along after accomplishing certain tasks. The acting is, for the most part, superb. The main voice heard throughout the game is that of Michael McKean (better known as Lenny from "Laverne and Shirley") He plays the voice of the Dungeon Master. Other actors include Dirk Bennedict and — heaven help us all — Rip Taylor.



***Zork: Grend Inquisitor* is an improvement over the last *Zork*, but the first is still best**

Overall, *Inquisitor* is definitely a step up for the series and puts *Zork* back on the right track after a serious stumble with *Nemesis*. Hopefully, this will continue. Well done.

Rating: ★★★★

rating

PC

Still shaking

Quake 2

Publisher: Activision
Developer: Id

It's like *Doom*, except ... well, it's like *Quake* except ... oh, just keep reading

Though literally dozens of so-called "*Quake* killers" have been promised from just about every developer under the sun, there's something ironic about the fact that the only game thus far that has managed to top *Quake* is, in fact, *Quake 2*.

For fans of the original, *Quake 2* adds several features and elements that are sure to please, although there are still several features that were promised that were not delivered. Probably the single most significant addition to the game is a vastly improved single-player mode. While the departure of John Romero cast some doubt on whether or not Id could deliver good level design, those questions should be put to rest — *Quake 2* boasts outstanding single-player level design. A new and welcome element is mission-based objectives for most levels. Players receive updates from their computer that inform them of what steps need to be taken next. Whether it's aligning a communications dish or destroying a reactor, Id's implementation of missions is outstanding save for the fact that there is some backtracking over levels that have previously been explored.

Graphically the game has received a major overhaul and is pushing far more polygons than the original was asked to do. The addition of rotating brushes, colored lighting, and better transparencies makes *Quake 2* an excellent showcase piece for anyone with a 3Dfx- or other OpenGL-supported card. The audio has received much-needed attention as well, with the game's sound effects being completely redone. The result of these efforts are far better shotgun blasts, grenade bounces, and rocket firing sounds. Unfortunately, the game's soundtrack does leave something to be desired, as it is poorly composed, almost generic guitar rock that just doesn't cut it — and fails miserably at producing the needed adrenaline rush.

Weapons within the game have been far better balanced (no more running straight for the rocket launcher in multiplayer). The return of the chain gun and BFG, in addition to the introduction of the railgun and hyperblaster, were strokes of genius. But the new base weapon, a poorly designed pistol, is grossly inadequate for deathmatch play and is as inaccurate as it is boring when compared to the stock shotgun of the original *Quake*. In other multiplayer gripes, the promised Capture the Flag mode was not delivered in the shipped package, and the cooperative option of the original was also axed. As such, until new mods are released on the Net, *Quake 2*'s multiplayer modes are shallow and boring, despite being able to support far more players simultaneously.

All in all, Id should be commended for the advancement of its technology and improvement in its single-player level design, but it's going to be up to mod designers to provide the necessary additions to the multiplayer game in order to make it stand out from *Quake*.

Rating: ★★★★

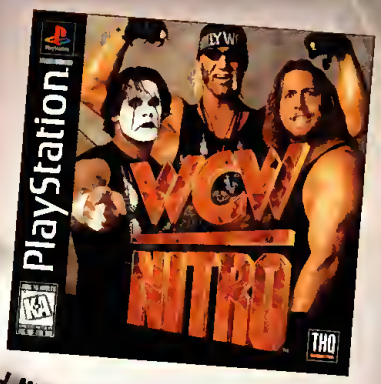




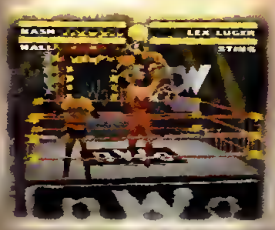


***Quake 2*'s OpenGL-powered 3D engine is a wonder, as is the single-player level design — if only the multiplayer modes were up to snuff**

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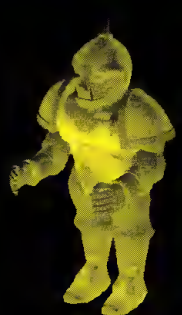
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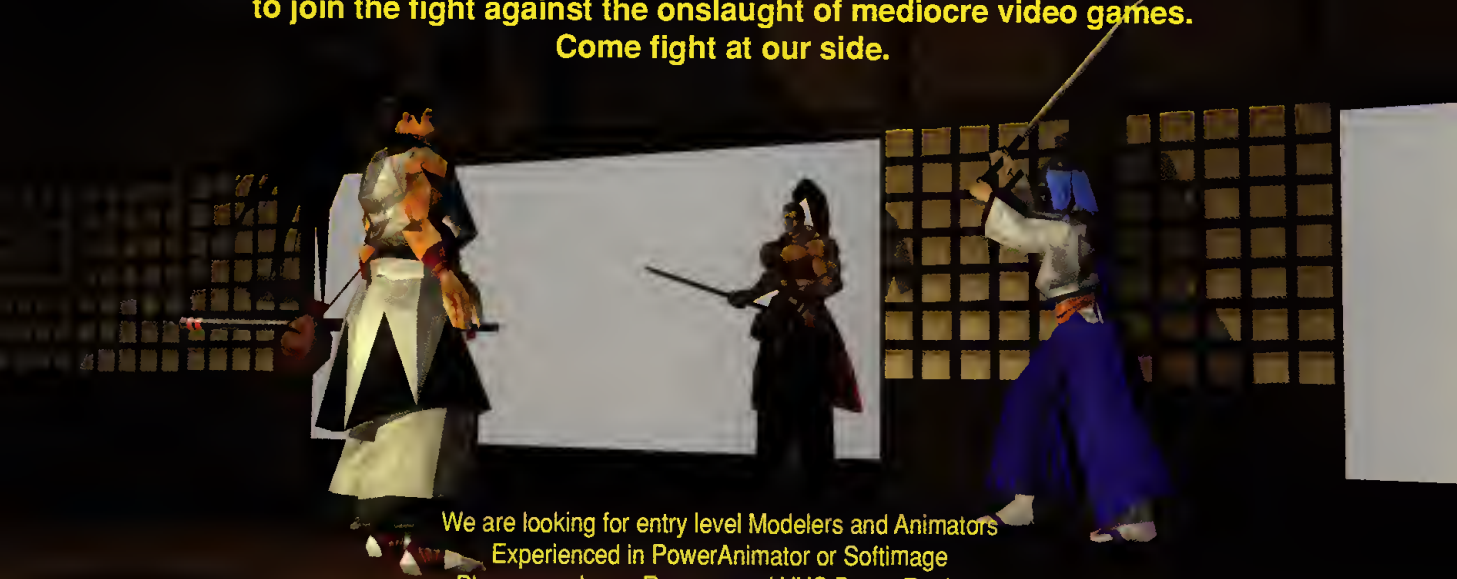
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letters

Write us — we crave the attention

I was reading Finals in **NG 36** and in the review of *SF Rush* it said there are 24 possibilities normal, mirrored, backward, and mirrored backward. Who wants to race the same course four times? If you know the course in normal play, what makes it any harder or different to play it mirrored? Is a movie any better or different if you place a mirror by a TV and watch it in the mirror? *F1 Pole Position* offered an astounding 21 courses, and if you consider *Mario Kart* and *Diddy Kong Racing* true racing games, they both have many courses.

Brian Golas
BigJonson3@aol.com

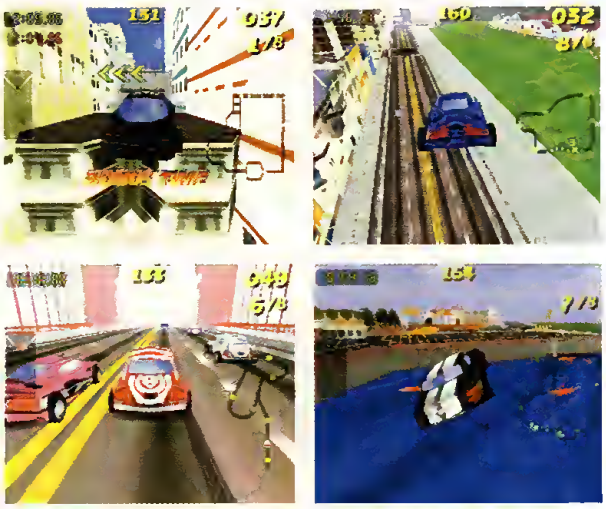
Although the scenery doesn't differ, if you think racing a track backwards and mirrored is easy once you've raced it forwards, you obviously haven't tried it. It requires relearning the track all over again. With the addition of the keys, *SF Rush* has more replay value than any racer we've seen in ages.

I am Mexican and I love to play videogames. But I was noticing that here are plenty of games with Caucasians and Asians and a few featuring African Americans, such as *Shell Shock* and *Final Fantasy VII*. But I can't think of any games with a Latin hero or heroine besides that *Speedy Gonzales* game for the SNES. Are there any games with a Latin theme or hero?

Philip M Piceno
funky.monkey@juno.com

Check out the forthcoming *Grim Fandango* from LucasArts. It features Latin characters and a graphical theme taken from Mexican Day of the Dead "Dia de Las Muertes" folk art.

I'm writing about errors and omissions that I saw in your (otherwise very well-crafted) story about the Voodoo^2 chipset from 3Dfx Interactive in your January issue. First — I was surprised to see Quantum3D referred to as a "subsidiary" of 3Dfx. Actually,



Anyone who thinks driving a track in reverse order isn't a different challenge should try *San Francisco Rush* — it goes both ways

Quantum3D, Inc. is an independent, venture-backed company and has been such since I left 3Dfx to start the company (with Herb Kuta and some other key folks) earlier this year. We do enjoy a close relationship with 3Dfx — especially given that Quantum3D's realtime 3D products to date are exclusively based on 3Dfx technology. I was also one of the founders of 3Dfx (along with Gary Tarolli and Scott Sellers), and our two companies have a number of common shareholders including our chairman of the board, Gordie Campbell, who's also C.O.B. of 3Dfx. Nonetheless, we are a separate and distinct entity, although I wish I could get the same deal I used to get on chips for the Obsidian boards when we built them inside of 3Dfx!

In the same issue, the article referred to Quantum3D's new board as the SB100. The correct name of our new realtime 3D graphics accelerator is the Obsidian 100SB, which is our "scan-line-interleaved" product that delivers Voodoo^2 level of fill rate performance (90Megapixels/sec) today by using multiple Voodoo "1" chipsets in parallel. This is the board that's used by LBE Systems on the forthcoming *Quake* arcade systems, as well as by LBE Technologies, Jessler, HanaHo, and others on PC-based coin-op and LBE systems around the world. The 100SB is also becoming somewhat of a standard in the visual simulation market — with customers like the USAF, the Marines, and others employing the product for training applications where interactive realism and low cost are important.

Finally, in the table of companies listed as supporting Voodoo^2, Quantum3D is not mentioned. We announced support for the new chipset, as well as an upgrade (trade-in) program for our current customers at Comdex. If your readers think an Obsidian 100SB is the ultimate *Quake* board, wait 'til they see what we're doing with Voodoo^2.

Ross Q. Smith
VP of sales & marketing
Quantum3D, Inc.

Thanks for setting the record straight.

I am really sick of the "sex sells" advertising strategy being used, especially in the past few months. I find this sort of crap more than just demeaning to women. It is a complete insult to anyone with a halfway respectable level of maturity to think these ad campaigns will make us more compelled to buy their products. Eidos has almost single-handedly brought the gaming industry back to the sixth grade. As a hardcore gamer I hate to let anything but pure gameplay affect my purchasing judgment, but to be quite frank, *Tomb Raider II* will not be played or recommended by me. I hope Eidos is listening.

OK, moving on. You are no doubt aware of the explosion in the emulations scene. So where is the investigative feature article? Gamers need to know what the legal implications of emulation really are and what effect emulation can have on our industry. What do Sega and Nintendo think? Even Sony may have something to worry about, as the current version of PSEmu can run a few games already. Don't tell me you guys are afraid to bring this subject into the open.

Mark F. Domowicz
domowicz@arch.wisc.edu

The market may be in an upswing now, with an influx of new, casual gamers who will buy something just

because a pretty girl is on it, but if history tells us anything, it's that up markets don't last, and strategies — and companies — that rely more on marketing to casual gamers than on gameplay don't stay on top for long. As for emulation, we're way ahead of you. Check out **NG 27**'s "Revival of the fittest" for details on the retro-gaming scene

Nintendo power is better!!!!
Matt Krems
mdsmlucky@juno.com

Matt Krems, ladies and gentlemen, has spoken

I'm just wondering if Koei is still producing games. I've always loved all the games that it produced for the Super Nintendo. *Uncharted Waters* happens to be one of my favorite games. Will it be producing games for N64 or any other gaming system?
iyyi@indiana.edu

Despite a round of layoffs a few months ago, Koei is still alive and well. The company's latest PlayStation effort was a well-received fighting game, although, in the best Koei tradition, all the characters were historically accurate figures. Koei has also announced plans for Nintendo 64 software, although no titles have been confirmed.

I'm very disappointed in the interview with Phil Harrison. A lot of the questions you guys asked were genuinely interesting, and it seemed to me like instead of genuinely answering them, he just completely dodged the issue and spent the whole time telling us how far ahead Sony was and how it didn't have to worry about its competitors. If I had wanted to read that kind of speaking, I could read just about any interview with any executive during **Next Generation Online**'s E3 reports, where companies tell you how great they are.
UnknownMat@aol.com

Ultimately, all we can do is ask the questions. We can't force forthright answers. Still, one can often glean a lot of information by noting what questions people keep dodging



Phil Harrison — a.k.a. The Artful Dodger — both annoyed and impressed readers with his interview

During your **NG 37** review of *Armored Core*, you say, "True, the vertical split screen can only show so much, and there's no link option, but it still gets the job done." I'd just like to point out that *Armored Core* does have a link option, which doesn't appear as a selectable option unless you start the game up linked. It adds tremendously to the play, in addition to the great single-player missions. I'm not sure how, if at all, this changes your rating of four stars, but I thought I'd bring this to your attention.
Mike Furtak
YumeKiri@aol.com

Thanks for pointing out the error, Mike. We've taken another look at the game, and while the two-player mode is certainly improved by the link option, the one-player mode still isn't strong enough to justify an increase in rating.

Enough about the ratings. I would like to address the issue of backwards compatibility in game consoles. There has never been, to my knowledge, a generation of game machines that was compatible with the previous generation. Why is this so? I am assuming that cartridge format differences accounted for part of the problem, but Nintendo proved that can be overcome with its Game Boy add-on for the SNES. The PC has had this luxury. Most software for Windows 3.1 will also run on Windows 95. **NG 37** said that the Voodoo^2 would be backwards compatible, so why can't the game consoles?
Scott Brawner
sbrawner@compuserve.com

To the best of our knowledge, the Atari 7800 is the only backwards compatible console ever developed. (The Genesis also had a Master System add-on.) Companies don't like backwards compatibility for two reasons. First, the temptation for third parties is to write the game simply for the older system, which presumably has better market penetration. Second, from a marketing perspective, it's considered a smarter decision to make a clean break with the past. Our opinion? Look at the MS-DOS PC, a system technologically inferior to its main competitors — the Mac, the Amiga, the Atari ST. Why did it succeed where they failed? We think backwards compatibility is a major factor, and it could be a major factor in the next generation of consoles from Sony, Sega, and Nintendo as well. See our news section for more about rumors of backwards compatibility for PlayStation's successor.

I'd like to thank you for the article "Girl trouble" from **NG 37**. It seems that recently, the issue about female gamers has become a hot topic. Many game magazines have written articles on this issue. However, I feel that your article is the most unbiased and unstereotypical one that I've read.

As a female in the gaming industry, I was glad to hear the opinions of other women in the industry. I'm glad that I'm not the only one who feels the way I do about the way females are portrayed in videogames. Other gaming magazines made such statements as "girls don't like to die in videogames" and "girls like to 'clean things up' in games rather than blow things up" and the sort. Most of these statements simply aren't true.

Being a true all-around gamer, I personally look past the physical appearances of the female characters and focus on the game itself, however, the fact that most female game characters are overly top-heavy and scantily clad still bothers me. I believe that one reason female gamers tend to like RPGs and puzzle games better is because these games usually have less of the barely clothed female characters and panty-flashing

corresponding



Our January feature on female game characters and female game industry personnel seems to have struck a chord or two

schoolgirls than fighting games and some other genres, not because female gamers are afraid of blood and beating people up.

Masaama Sou
game designer/artist
sephirah@hotmail.com

Thanks for your letter.

I just finished reading the "Girl trouble" article, and I'd like to make a few points. I'm a 17-year-old male, and contrary to popular belief, I don't start drooling like a horndog when I see a picture of Lara Croft or play a game with a well-endowed female character. I did, however, have to read your story twice, having skimmed through it at first (looking at the pictures), then actually reading what was written the second time around. Perhaps that says something for game companies that put beautiful women characters in their software, eh? Pathetic as it may seem, it does seem to work.

I don't suppose there were hidden intentions behind printing an article in which there were pictures of 14 or so massive-breasted women and one nudie of Lara Croft, was there? I wouldn't want to think that your magazine was taking any lessons from the big, bad, sexist videogame companies.

James Ballard
shiv_@hotmail.com

We were going to illustrate the feature with tasteful Bob Ross landscapes, but we thought illustrating it with examples of what we were talking about would better serve our readers. Still, we ran the most offensive pictures (the English ads and the nude Lara) smallest and decided not to print the frontal Nude Raider image.

Was the person who previewed *Newman Haas Racing* on crack, or what? It's a CART game, not an IRL game. IRL in the inferior open-wheeled racing league has only the Indy 500 to recommend it. CART is the open-wheeled racing league (using what were formerly known as "Indy cars") that has the best drivers, cars, and teams (like Newman Haas). The two leagues split off a couple of years ago.

Francis O'Conner
South Boston, MA

Next Generation regrets the error, which was due to an editing mistake. The offending editor has been wrapped tightly in barbed wire and forced to drink 10 gallons of water.

I have noticed that people are writing in to you only to complain. All these people do is piss and moan! Get over it, people! I feel that unless you ask for letters that concern pissing and moaning, then people should submit questions or ideas that are dealing with games or computers. I am truly sorry that you have to listen to these people bitch.

Scott
littlej@dataex.com

Thanks Scott, but we don't mind it when people complain. We actually get a lot of complimentary and thoughtful letters too, but we think we better serve our readers by printing and responding to the complaints, not by patting ourselves on the back. Most letters we get start by saying something like, "I love your mag, but . . ." Since we want to get in as many letters as possible, we tend to edit out everything except the main point. In general, letters that ask interesting questions usually get a response (and sometimes get printed). Corrections are always printed when brought to our attention. Questions about specific games, codes, tips, or "which system should I buy" are always ignored.

Though I enjoyed your "Are you a hardcore gamer?" survey in **NG 38**, I found more than a few questions to be slightly unfair, in the sense that they cannot possibly apply to certain people (like me, oddly enough). For example, "General obsession," number 75: "You organized the first multiplayer game ever in your office." Like many others, I have the misfortune of still being a student, and as such cannot possibly be expected to check this one off, though I certainly would do it if given the chance. Or "Challenge level," number 21: "You've finished at least one Infocom text adventure." I'm sure most gamers under 21 were simply too young to enjoy them at the time. For me personally, I was only old enough to seriously appreciate gaming as more than just a fluff hobby about five years ago, and there was no way I could possibly be expected to catch up with more than a decade's worth of info already past. The kicker, though, was in "Social life suffers," number 4: "You've talked your date into watching you play a game." I don't get dates! I sit around playing videogames all day!

Big Mitch Krpata
bigmitch@stellar-corp.com

As we said in the introduction, the questions weren't meant to be taken totally legalistically — if you set up the first multiplayer game in your school's computer lab, it's cool. As for the Infocom games, everyone should play at least one. Think of it as the gaming equivalent of reading the classics, like Shakespeare (and if you're only going to play one Infocom game, we recommend Dave Lebling's *Lurking Horror*). As to your last point, well, just remember, if you want to be really hardcore, you need to have a complete life first so that you can then forsake it to play games.

Note: Thanks to everyone who sent in Fortran, Cobol, and 6502 assembly code examples of Jeff Rendl's original code example (**NG 34**). The contest is officially closed, but as our way of saying thanks, everyone who entered wins a free subscription (or subscription extension). If we ever need to solve a Y2K bug here or do some Apple II programming, we know who to call.



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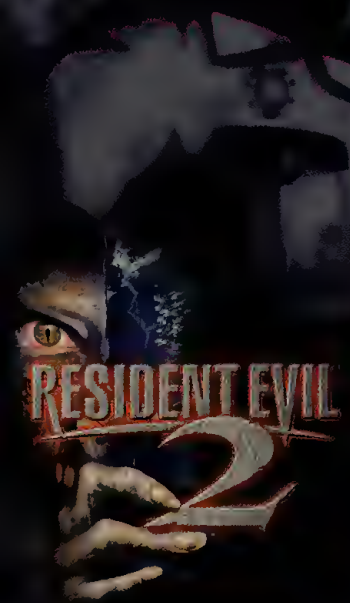
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